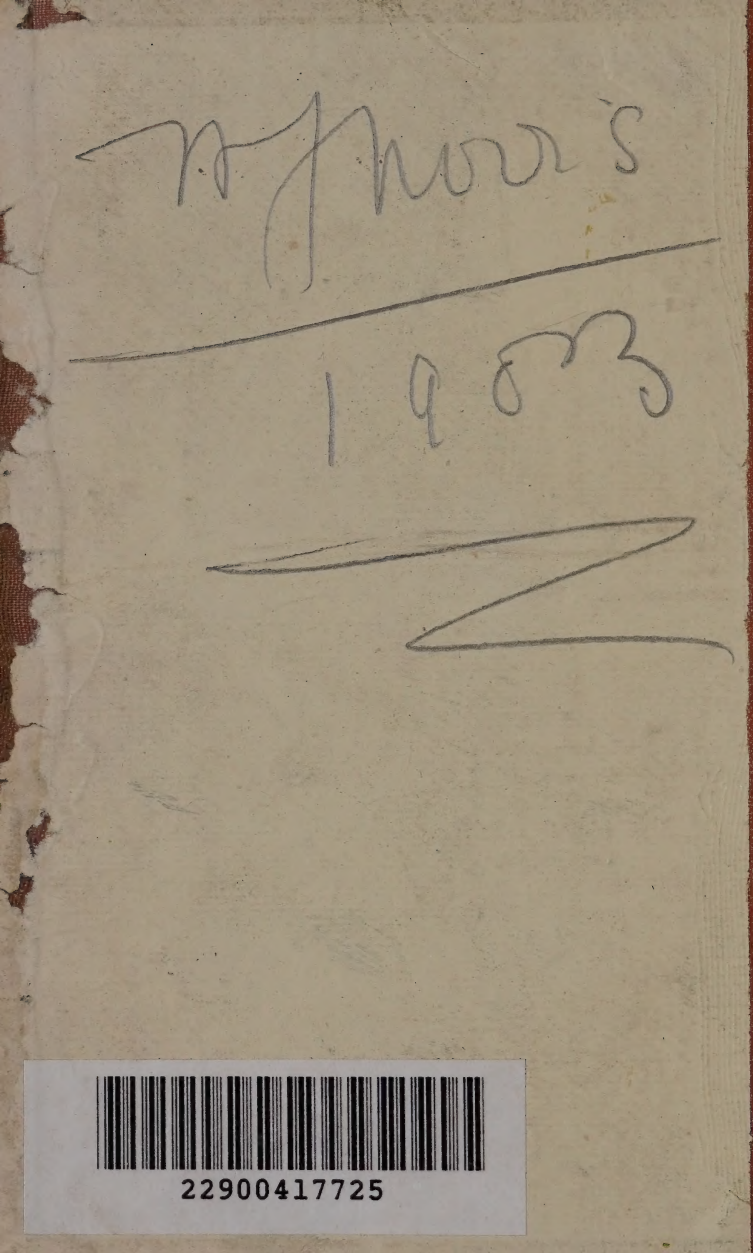
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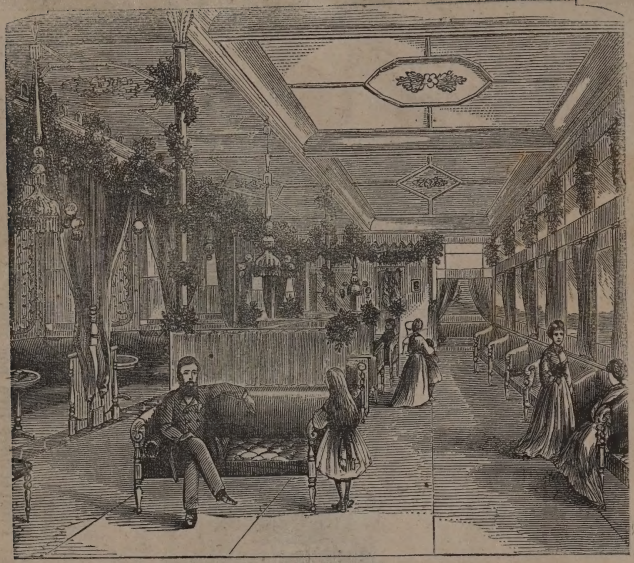

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(For all numbers referring to treatment see Bath List, and for all subjects and diseases refer to Index.)

FOR important essays on life, mental and physical, see articles in the latter part of this work. "Know thyself" is the grand point to attain, but how few even make the attempt! and the consequences are so many wrecks, ruin, and misery, never intended by an all-wise Creator. The signal neglect to apply local external heat to organs deficient in vitality is the grand defect of all Allopathic or Homœopathic practice. The cause of the death of thousands of human beings, or their misery and suffering, is the fundamental error held by medical professors, that disease is something to be subdued or driven out of the body, when, in fact, it is their want of means to supply vitality.

VITAL HEAT IS LIFE; DEFICIENCY OF IT WEAKNESS AND DISEASE; ABSENCE OF IT DEATH. Drugs, Allopathic or Homœopathic, Opiates, Nux Vomica, Belladonna, Strychnine, Arsenic, Iodine, Bromide of Potassium, and the thousand destructive preparations, blisters, leeches, cupping, setons, caustic, cannot raise the vital power, but lowers, tortures, and destroys it. A fatal error is made by the faculty in treating functional weakness as disease, when only rest and proper diet, and a little help from our body bandages, would restore. Our twenty-one years' experience has shown us thousands of cases of organic disease which began in very simple functionary derangement, but by the doctors' remedies were made the cause of life-long suffering or death. Our exclusively external remedies always bring comfort, and cure where cure is possible.

SEVERAL PREFACES will be found in the latter part of this work, explaining the origin of our work at Matlock Bank, which is now brought to a close, so far as we are concerned in prescribing for patients. We have, however, found in DR. W. B. HUNTER, M.D., C.M. GLAS., late of CLUNY HILL HYDROPATHIC INSTITUTION, FORRES, a successor who will carry out, and I have no doubt improve upon, the plans which have been so signally successful in the cure or relief of every malady the human frame is liable to, and while we live we shall still give any assistance in our power. A great number of surgical cases have been treated, resulting in saving amputation; abscesses and wounds have been cured, which would have resulted in cancer. Cancer in many cases has been cured, and in more prevented from being developed. A great number of severe mental maladies have been restored to the full possession of their reason, as well as a great number of delirium tremens cases; our extremely mild treatment being peculiarly suited to the latter cases, so difficult of cure by other means; also many serious cases of accouchement, every one thoroughly successful. Again and again we made attempts to get out of the work, having so much on our hands at Lea Mills, and at our schools, chapels, and hospitals; twice we closed the place when on a smaller scale: but such numbers of invalids came into

the neighbourhood, begging of us to apply the same means for their restoration which had restored their relatives and friends to health, and which treatment they could not get elsewhere, that we could not resist such appeals when we saw our applications would to a certainty be successful in their cases; and so we have gone on from year to year spinning our web of life, until the failing powers of my wife has compelled us to come to a stand. It is now twenty-one years since we began our work, and for many years together we have not been absent for twenty-four hours from home; for many years we have never failed to be at the Institution—at one time four miles from our home, and the last eight years two miles—at eight a.m. Mondays, Wednesdays, and Fridays. Twice each of us has been near death from the effects of our labours; but even when ill, one has always attended to the patients, of whom upwards of 25,000 have been received at the Institution and Lea Mills Free Hospitals to this time. And to show the soundness of this entirely new and original application, we have sent bathmen and bathwomen to most parts of Great Britain, and in one case to France, to treat cases in too critical a state to be removed to the Institution; and in no one instance have we had any complaint of improper treatment, but, on the contrary, we have had letters of thanks for the skill and success with which they have been treated. We can refer to North and South America, from British Columbia, on the West Coast, by Panama, Mexico, Lima, Valparaiso, round by Cape Horn, to Demerara, Essequibo, the Gulf of Mexico, New Orleans, New York and the interior, Philadelphia, Boston, Oregon, many parts of Canada, Moscow, St. Petersburg, Denmark, Sweden, various parts of Germany, Austria, Switzerland, France, Portugal, Spain, Greece, Constantinople, Smyrna, Alexandria, Grand Cairo, Suez, Bombay and the interior, Madras, Calcutta, the Neilgherries and Punjaub, Lahore, Burmah, China, Australia, and New Zealand; from all which places we have had many patients, and testimonies to the efficacy of our treatment, and blessings on our work. The fact is, our system is simple, and founded on true principles of natural cure. Many thousands are now enjoying life from the knowledge they have gained at our Institution or from our books; and many a letter have we received expressing thanks to God that they were led to our place or to read our books, and to practice our treatment at home. We strictly prohibit all stimulants, tobacco, medicine, sea baths, Turkish baths, or cold plunge baths. It has been a work undertaken without any pecuniary views; I have sunk a moderate fortune in the work. I had made an ample fortune in business, and having no family to provide for, I felt at liberty to use it according as my inclinations led me. That the Institution and the system will prosper and extend we are perfectly certain from our past experience. My family motto is, "TRUTH IS

GREAT, AND WILL PREVAIL," and I have added to it "I ACT;" for without an unflinching determination to carry out inspirations, talent is of no avail, and for want of this determination a vast amount of talent dies with its possessors without benefiting mankind.

I have now thoroughly revised my present Fourteenth Edition of "Practical Hydropathy," giving all our experience to this time; and I have also, in conjunction with my wife, revised her "Manual," and added a considerable amount of new matter, together with anatomical diagrams and engravings of baths, &c.

INTRODUCTION.

I CLAIM entire originality for our mode of administering Hydropathic treatment, and that there is no comparison in principle betwixt our methods of treatment and that of any other mode of cure, either Hydropathic, Allopathic, or Homœopathic, or Turkish Bath practice.

When I was led to study the nature and functionary action of the human organism on grounds entirely free from all professional prejudice, I was struck with the simplicity of deranged action of the human organs of life—the stomach, liver, bowels, kidneys, lungs, and skin; and, just as I applied remedies to deficiencies in our business and mill machinery, I applied means to help any weak or deranged organ. When one of our machines is out of order, we do not give general treatment haphazard, but we find out the precise point out of order, and there apply a scientific and certain repair. And, by applying the same certain principles in the treatment of human ailments, and no random guesses, our great work of now twenty-one years has triumphed over all other methods. Thousands of cases which have been given up as hopeless have come to us, and have been restored to sound health, and our work stands out before the world as a successful fact which cannot be disputed. Our local external applications gives life so easily and so certainly, without deranging or ruining the internal economy of the frame, that they have only to be tried to convince the most sceptical of the common-sense views and practice we have adopted. As to using cold water to invalids, or to the delicate or nervous, it is an outrage on common sense, just as giving tonics and stimulants to whip up a weak frame; the idea of sweating disease out by Turkish baths, or attempting to give more breathing power by stretching the delicate air tubes of the lung by compressed air bath, are methods, one would think, need only to be proposed to be scouted. The fact is owned by the medical profession that they have no specific for the cure of disease, and hence the infinite variety and contradictions in their practice. Medical men rarely agree on the same course of treatment, or the nature of the disease. Of course where severe organic disease has been established only relief can be expected; but in every case, however desperate, we can always do that.

Men of known moral habits, esteemed in their position in life—men distinguishing themselves in promoting Christianity, civilisation, and the welfare of mankind, are nowadays frequently and suddenly cut off, greatly lamented, far before the natural term of life, without their relatives or the public having any idea of the real cause why such men die so much earlier in life than their forefathers. It is worthy of remark that this is comparatively seldom the case with females; and it is a striking fact that female life can be insured at a lower rate than that of males, although they have lower powers of heart action, and, as a rule, do not take the bodily

exercise men do to keep themselves in health. But when they are poorly milder measures are taken with them, and so they often escape the heroic treatment men are subject to, but not always. Nevertheless, we see them under the doctor's hands a lifetime. The moderate administration of drugs keeps the system in a state of distress, and often ends in death. The causes of shortened life and sudden death with men are commonly stated and believed to be the commercial, professional, political, and literary pursuits of the present time making so much greater demands on the human organisation than formerly, and consequently causing this destruction of life, often the most valuable to society, and in the very prime of manhood. But if the public had been behind the scenes, as I have been the last twenty-one years, and could have witnessed the hundreds of wrecks of previously fine specimens of men in bodily and mental structure and qualifications, ruined by the new and so-called scientific medical discoveries and the high living so little known to our forefathers, they would soon be convinced that the so-called scientific discoveries are not blessings, but terrible engines of destruction. Sir Astley Cooper, the most celebrated anatomist England has produced, says, "The science of medicine is founded on conjecture and improved by murder." For other opinions of the first professors of former and present times as to the effects of medical practice see Index. When a hard-worked man feels out of sorts a surgeon or M.D. is sent for. He examines the tongue and the pulse, and asks if the bowels are in order, and, according to the symptoms, prescribes some drug or anti-vital means to whip up the flagging powers, or stifle the excited brain, or stupefy the nerves of any part where there is pain by opiates, subcutaneous injection of morphia, belladonna, iodine; or irritate and relax the stomach, and bowels, and liver by calomel, podophylline, aloes, &c., all to the ruin of the already exhausted frame; and when these anti-vital means cause further exhaustion, then brandy, champagne, port, or sherry are called into requisition, in thousands of cases to cut useful lives short, and commit outrages against nature, science, and common sense. It is humiliating to think how educated, intelligent people can submit to treatment they know nothing of, but the terrible effects of which a little observation and experience shows them has no foundation in true principles of science.

Many of the public, in very despair and horror of drugs and blisters, subcutaneous injection of morphia, &c., have been induced to patronise homœopathy without the slighest reason or knowledge what it is. Sir James Simpson, in his work, "Homœopathy: its Tenets and Tendencies" (Simpkin & Co.) fully and completely exposes the charlatanry and the utter want of principle in the system. He quotes Hahnemann's own statements as to the mistiness of his pretended discovery that like cures like, &c. —if a person has a disease the proper drug to cure it is what would produce it in a healthy subject. Can human credulity be called upon for greater sacrifice of common sense? The book is well worth perusing by all who wish to know the process of homœopathic treatment. Pages 17, 18, and 19 are enough to disabuse any but the most obstinate and credulous.

But we have a clenching matter-of-fact answer to all the boasted powers of homœopathic practice in the fact that homœopathic practitioners themselves come to us to be cured of diseases they find themselves utterly unable to cope with by their globules, pillules, &c., and having a dread of the allopathic dosing, leeching, blistering, &c., were willing to put themselves into the hands of a non-professional man as I am. They used their reason in their own cases, and were rewarded by successful cures, under our system. I well recollect a London homœopathic M.D. coming who, after a break down in the winter from over-work, had congestion of the liver, and of course general complication of disordered functions, for which his practice

was utterly useless in restoring vital action. He had read my book, and was convinced he must use some more powerful means than his infinitesimal doses. He dreaded calomel, podophylline, &c., and but for our peculiar and original treatment he would have soon sunk under the disease; his legs were filling with water, tongue loaded, pulse feeble, skin yellow. He came to me, I told him at once there would be no difficulty in restoring him to health, as his disorder was entirely deficiency of functionary action, which our local external applications would very soon put in good working order. In three weeks he left us, thoroughly well, and with a knowledge how to prevent such a state coming on. I could give the names of a number of homœopathic practitioners, as well as M.D. allopaths and surgeons by the score, and homœopathic chemists, who have surrendered themselves and their relatives, and sent patients, to our care and treatment. Now if the homœopathist or allopathist systems were true, such would not be the case. Nothing can be more strikingly condemnatory of their principles than for the professors and administrators of such practice to come to us. But that they have come, and do come, and their patients too, and get well of previously hopeless diseases, are facts that cannot be controverted.

While I am writing this it is sad to think of the number of victims who have come to our institution, some in time to be restored to health, others only to have life made tolerable. And it is sad, to my mind, to think of many who have come too late for us to be of any permanent service. In all cases the cause of their desperate state was very easily traceable to the drugs, blisters, strychnine, bromide of potassium, &c., they had submitted to, or the uselessness of homœopathy in providing means to restore the vital action of organs out of order, many having been told by their medical advisers they would be well in a short time. But when that time was expired, again they found themselves worse, yet went on hoping, believing in the best medical authorities of the day. For, they argued, if such men did not know how to treat, who did? They were handed from one doctor to another and another, until despair sent them to us. I could give the cases of a number of my intimate friends and contemporaries who have been sent into eternity by this drugging. One, a remarkably healthy man, in the full vigour of manhood, had a little derangement of the liver from not taking his usual accustomed exercise. An M.D. and a surgeon were called in, and calomel, the orthodox remedy, given pretty freely. This lowered the power of the heart to overcome the congestion, and the certain consequence, as I predicted to a friend, was pressure on the brain. Then cupping, leeching, and more calomel brought on apoplexy and death. A celebrated M.P., with an income of one or two hundred thousand per annum, a fine specimen of muscular power, took cold at the last election by taking his coat and vest off while in a state of perspiration, the weather being inclement. This, of course, congested the capillaries on the surface of the body, closed the pores, and deadened the skin. To remedy this stimulants were freely taken, then drugs and ointment, all with the certain effect of lowering the power of circulation or enabling the skin to throw off the natural waste. The result was a miserable skin disease and thorough disorganisation of all the digestive organs. After terrible suffering for more than a year, he sent his friend to me with a statement of his case. I told his friend I could assure him of a perfect cure by our means at our Institution if he came and gave up all stimulants and medicine. But this he declined to do, and now, more than three years since, he is in as wretched a state as man can be, and without a possibility of cure by drugs, Turkish baths, or any other so-called scientific remedies of the day. The end must be disastrous, and, strange to say, his friend who came to me about his case has succumbed to the doctors' murderous treatment a month ago. He was a fine specimen of a man, temperate in his habits, exposed

himself in a draught, brought on cold and congestion of the lungs, from which our treatment would have quickly restored him. He had the best medical help, and the routine treatment, blisters, &c., which killed my father, and kills a holocaust of human beings every year, and which quickly finished his earthly career, without any organic disease whatever.

A patient came to us early this year who, for a swelling in one of the glands under the ear had had blisters, then incisions, destroying the action of the gland, then excruciating caustic applications, until a cancer was formed of five to six inches in diameter. We have prolonged his life, and given ease, but I see no hope of saving his life. The Prince Consort was quickly poisoned; the Prince of Wales has escaped, with long and terrible suffering, by his youth and strength; the Earl of Chesterfield, at the age of forty, quickly sunk under the same disease, and the young Marquis Graham of a simple inflammation of the bowels. The brother of an eminent baronet came to me three to four years since for disease of the heart from under the first medical men of the day, who gave him no hope of life; and indeed, he was very near death, not from any disease of the heart, but from the effects of drugs given to quiet the heart's action. I could assure him of quick cure, and in six weeks he left us, thoroughly well, and has, although, as he told me since, been more pressed with cares and anxieties than for many years, remained perfectly well and gained half a stone weight. Yet, as in the former case, his brother, the baronet, a perfectly healthy man, for some slight general derangement of the system put himself confidently in the M.D's hands, and has lingered out a miserable existence of three years, when death closed the doctor's account and the baronet's delusion. People have only to make observations amongst their relatives and friends and see that what I state is true. The last case I have heard of is Mr. Platt, the M.P. for Oldham, dead from no organic disease. Travelling in France, feeling unwell, sent for the M.D., whose nostrums soon finished his career. Surely the time will come when mankind will observe and act on their own reason.

Another case I name in this book. A flax manufacturer had by enterprise and great industry, accumulated a handsome fortune at the age of fifty-four, and retired from business to enjoy the fruits of his labour, after having escaped the perils of changes in trade and monetary panics. But there was a danger to the frustrating of all his plans for a quiet enjoyable conclusion of life he had no idea of, and that was the very source he looked to for continuing life, but which proved his destruction. He went one day to a public dinner, ate of viands made to gratify the palate, not to support life. In the night, at two a.m., awoke with violent sickness; sent for his doctor, who, having no common-sense specific to relieve the burdened stomach, gave arsenic to stop the sickness, which was a natural effort of the organ to expel the indigestible matter. The arsenic stopped the sickness, but laid the foundation of cancer of the stomach, of which he died a year after his seizure. He came in his extremity to me, but after a week's trial I gave up the case, and sent him home to die a distressing death.

Another case, an ironmaster from Staffordshire, a fine wiry frame, ardent temperament, very moderate in his habits of life, age thirty-eight, with a wife and young family. Over-work brought on dyspepsia, then the doctor came in, like the undertaker, to finish his career, and instead of prescribing rest from business at any hazard of loss or inconvenience, a poultice and some chillies or mustard to the stomach externally, and our comforting 233, 234, 236 (*bath list*), he gave strychnine, &c., and the whole random list of poisons, which ruined the organic nerves of the stomach; food could not be retained; then more advice in London and other parts of the kingdom, till he came to me, clinging to life and refusing to believe he was in any danger. He said he knew his wiry constitution, never injured by vice or excess, and was confi-

dent he should get well and live a long life, as all his progenitors had done. But, poor man, he did not know that his progenitors lived in a time when the terrible modern discoveries in chemicals were unknown. We gave him ease at once, and enabled him to retain a little arrow-root, revalenta, &c., longer than previously; but after a week, I called in our consulting M.D., then Dr. Cash, who said the case was hopeless. This was my previous certain conviction. We broke the matter to him through his wife, who was with him, that I dared not go on with his case. He was very wroth with me, and said he had more faith in our treatment than I had, and wished to stay with us; but, from twenty years' experience, I saw he was daily nearing the grave. I dared not keep him, and have the reproach of having caused his death, which we should have had. He returned home with his young wife to their young family and beautiful mansion and prosperous business, saying, as he left, that he should go on with our treatment, which was the only one which had given him the least relief from his malady, and should return to us to have tonic baths; but, poor fellow, I knew he would be in his grave in a few months at most, and such was the case.

Mankind fall around us like leaves in autumn, from the most simple derangement of functionary action, yet people take no notice, they seldom or never inquire into the causes which have produced the result.

This and last week's county paper records the death of two county men I knew well, one at the age of forty-nine and the other twenty-nine; both men of regular lives and general good health, the former for a local ailment near the rectum, which our warm sitz baths, our fomentations and mustard leg baths would easily have cured (see tumour near anus, Index). Complained a week or two before sending for a doctor, who called in two others. An operation, no doubt easily avoidable by our means, was performed, and he died in about twenty-four hours, leaving a widow and family. The other, a personal friend of mine, a remarkably handsome, fine-framed man, of temperate habits, went with his wife and children to the sea-side, got cold, which brought on disordered state of the liver; he returned home, the doctor was called in, pronounced typhus fever, and, notwithstanding Dr. Gull and other doctors boast they have a specific, he soon sank under it. One application of our 47, &c., would to a certainty have saved his life. We have never lost a case of typhus, or typhoid, or gastric fever out of the great number we have treated at our Hospitals or the patient's homes. Many a time a telegram has come to summon a bath attendant to a dying case, which has been quickly restored.

I and my wife could fill volumes with such harrowing cases, solely caused by medical practice, and, thank God, we could fill volumes with living witnesses to being rescued from death, mutilation, or life-long suffering.

This day (June 14, 1872) our friend, Mr. Alcock, of Mansfield, manufacturer, came to dine with us at Riber Castle. During dinner he said it was just seven years since he came to our Institution at Matlock Bank, given up by all the surgeons and M.D.'s he had been under for four to five years, unable to attend to any business for a long time; had previously visited Scarborough and London, by the advice of his doctors, who were glad to get him out of their sight, after drugging him almost to death. I told him, as soon as I had heard the history of his case, that as he had no organic disease, and had had nothing done for his recovery that should have been done, and an infinite deal done that should have been left undone, I could assure him of restoration to sound health, which was the case in no long period, and he has never failed since, but is now hearty and vigorous, and engaged in an extensive, prosperous business, happy with his wife and family. Such successful cases—and we have had them by thousands—have made us regardless of our own lives, until now we have had to stop from sheer exhaustion, and give up our charge to Dr. W. B. Hunter.

If one single current number of the *Medical Journal* is taken up, and judged by the commonest of common sense, it will show how utterly devoid of reason and science the so-called legal practice is founded on. Take for instance a writer in a recent number of the *Medical Gazette* (May 6, 1872), as follows:—"*It is owned that bleeding for dropsy is dangerous,*" yet as the profession know of nothing with certainty to remedy the ailment, they bleed, &c., at random. They say "*first ascertain the cause, and then apply the remedy;*" that is just what common sense would suggest; but they do not do so. What is dropsy, but the undue retention of the watery fluids, the lymph and the serum, and the deterioration of the blood? Doctors know there are no other watery fluids in the healthy body; then what is the cause of these fluids being in excess? Why, undeniably the want of power in the lymphatic and serous glands and membranes to circulate the fluid, and carry off the excess through the natural channels into the venous circulation through the skin and lungs. Now, I ask, is bleeding or the depressing opiates likely to increase the powers to act, or are they not certain to further weaken? And so they do, and kill the patient. Doctors know full well that when blood is taken away nature fills up the vacuum they have caused with the watery fluid to keep up the action of the heart, and so the very means they use to cure impoverishes the blood—and they call this science!

Much as we have warned our cured patients, it has often been our painful experience to hear of their sinking under the murderous doctors' treatment, after owing their lives to their visit to our Institution. One case gave us especial pain. A good Christian man in business, a cripple, and a terrible sufferer for years before, coming to us from sciatica, came and got perfectly well. I thought from the chronic, long standing of the complaint and his age, about fifty-eight, that he would never quite get well; but after patiently going through our natural restorative course of treatment, he was thoroughly restored to good health, and free from pain, and his constitution renewed. This continued for seven years, but unfortunately for him, he had a nephew a surgeon, to whom he went on a visit in winter, got cold, brought on stoppage of urine, and instead of coming to us or telegraphing for a bathman, he allowed his nephew to begin with catheters; then pain came on, then injections, until, after a year of terrible suffering, he sank under the orthodox treatment. Yet the nephew would do just the same in a similar case. Our poor suffering friend deeply deplored he had given way to his nephew's action. Shortly after he had begun his nephew's treatment he wished to have ours, but it was too late for us to interfere. I knew his doom was sealed, and that being generally a healthy man he would die a lingering painful death, and be finished with opiates at last, which was the case. We could fill volumes with such cases.

If we had had any pecuniary or other personal motives in bringing this practice before the public, the truthfulness of our views and statements might be questioned, but when we have given up twenty-one years of our lives to the work, and been brought to the brink of the grave several times by our labour, and sunk, what would be by many considered a handsome fortune, without any possibility of a pecuniary return, I think our statements are entitled to consideration.

During the last twenty years few even amongst the medical faculty have had such opportunities of observation of human character and the vicissitudes of life as we have had. They see their patients mostly at their homes, and that for a short time. It is true they hear much of the sorrows and sufferings of life, but in our experience we have had them residing in the institution for many months together, and in many cases with their wives and members of their families. We have become identified, not only with their physical infirmities, but their mental ones, and often with their domestic affairs. I

have often been urged to keep a record, and told what an interesting and instructive history I might write; and so I could do, but for the extent of it; the number we have had has put it quite out of question. I have seen the successful man of business, looking forward to the enjoyment of his hard-earned gains, cut down suddenly by disease or accident, or by mental depression; and when not fatal, of such a nature that life could only be looked upon as an endurance. I have seen cases, one of which I have in my mind now. A man of great inventive faculties, at the age of fifty-four, came with decided symptoms of softening of the brain, mental strain, and repeated doses of bromide of potassium had been given him as remedies, but which had prostrated him body and mind, although prescribed by an eminent M.D., who often told him he did not like to give it, but it was the only course he knew. He had the year before coming bought a beautiful residence, which a banker had erected without regard to expense; but, poor mortal, he had only occupied it a few years when he was called away to another state of existence, and now the new occupant, in a half-conscious state, is waiting his call, which cannot be long delayed. *Sic gloria transit mundi* (so passes away the glory of this world). I have seen the hitherto successful speculator come, prostrated body and mind from his last venture turning out a failure, and plunging him and his family in all the miseries of penury, from having enjoyed the comforts and luxuries of life without stint. I have in my mind now one of these. I have seen him, his wife, and happy young family, in former years enjoying their visit when they came for a recruit of their health, but one venture in foreign produce to a large amount turned out disastrous, and he has sunk in the tossing waves of commercial life, with almost an impossibility of rising to the same position again. We have seen hereditary insanity developed from various causes, and in hundreds of cases we have been instrumental in restoring reason, and teaching them how even with such a terrible constitutional malady, to live in comfort. I recollect many cases of this kind, and at this moment could point to living memorials of the success of our treatment. To attempt to give our experience of the many thousands of cases who have come as a last hope of relief, or life, from the endless causes of human sorrow, would occupy many more volumes than would be read, or I have time to write; but we have a vivid and delightful recollection of the many thousands of instances where God has blessed our instrumentality in restoring not only to health, saving amputations, enabling the almost ruined in health and pecuniary circumstances to recover their position, and with renewed health to have a knowledge how to live in security. I have in my mind now many living instances, who would welcome us into the midst of their happy family circles, but our still many engagements at home and at our Hospitals, and our extensive correspondence leaves us, even now we are relieved of our work at the Institution, little time for going from home. But what lessons of life are to be learned at our institution for the benefit and guidance of those who are unknowingly, in so many thousands of cases, pursuing the same road which has brought so many to shipwreck, or, rather, lifewreck! The medical faculty have an extensive field for exercising beneficial influence on mankind, but, alas! the pill, the draught, the bromide of potassium, the strychine, the arsenic, and the endless nostrums they profess to have found for cure or relief, and which poor confiding humanity believes in, but which are found, like the apples of Sodom, only ultimately to increase the suffering and misery they were intended to cure; the "good living," the stimulants taken when the natural powers are low, and the heart sinking from sorrow or disappointment, all ending with certainty, not in cure or relief, but in suffering, insanity, disease, disappointment, and death, is, indeed, a melancholy picture; but whoever reads this I am sure must corroborate my statement. Our lives (my wife and mine) have been spent for

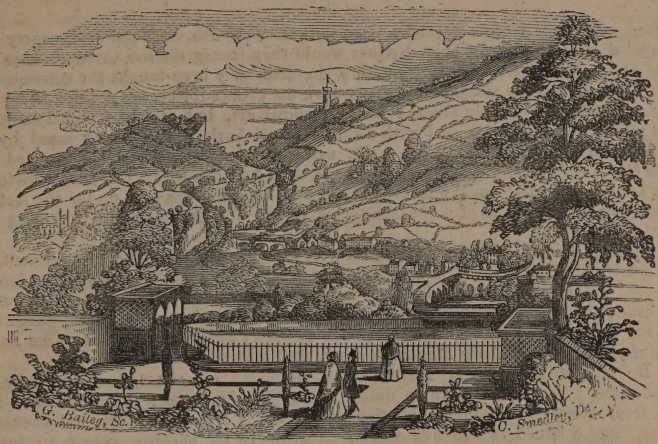
the last twenty-one years amid these scenes. By some of my contemporaries I have been regarded as an enthusiast, in going out of my position as a successful manufacturer, with all the comfort and means for the enjoyment of life, to follow a course which has entailed unremitting attention, anxieties, and even risk of life; but my reading of life from youth of the great benefactors of mankind has always prompted me to take them for my standard and example, and now in my seventieth year, and with the results of those who have taken different views of life, I have no reason to regret that I made that course my aim. For those whose aim only is to live at ease, and to gain the attention and consideration in society which wealth or prudence brings, Luther's course and that of a host of other great benefactors of mankind, is not the one to bring either ease or popularity during their lifetime. Luther, the spare-framed monk, with a soul of fire, saw the flag of the forlorn hope of religion and civilisation planted by the hand which rules the world. He seized it without a moment's hesitation, utterly regardless of personal consequences; he was convinced the cause was righteous, and for freeing mankind from error and tyranny, he made no calculation of personal consequences. A still small voice, which speaks at times to all, told him in the words of the prophet, "I have made thy face harder than adamant, harder than flint; therefore, whether they will hear or whether they shall forbear, they shall hear my words," and consequences of most painful experience that course ever brings brought on Luther, and will bring on all pioneers. His weak body and his great reasoning powers many times were near being wrecked in the fight, but though such individuals have such trials and sufferings, they have many a time the most exquisite experiences of life, and the consciousness that they are doing God's will and work. Many a time they feel they have the witness in their souls—that they are in reality an emanation from the Deity, and that God has, indeed, breathed into them the breath of life. They know, and delight in the conviction, that God has made mankind to be the highest, the brightest, and happiest of all His creations, and to be a mutual help to each other, and to carry out His great and benevolent designs for the good of all mankind. They feel a foretaste of that immortality which is so soon to come. Oh, ye prudent, cautious calculators, ye men whose sole aim is to build up families and give them inheritances and family connections, how many of you have I seen come to a sad end, and your purposes disappointed, and not only disappointed, but entailing corruption, to descend to generations to come! It is a melancholy truth imprinted on all neighbourhoods where thirty or forty or fifty years ago families were rejoicing in the prospect of the perpetuation of their house in honour and influence. But now where are they? And, what is of far greater consideraton, what memories have they left behind them? They are gone down the stream of time, unrespected and soon forgotten, leaving no "footprints on the sands of time" that they were a blessing in their day and generation. In the fifth chapter of the Wisdom of Solomon we have a graphic, true, and striking description of such. Luther's motto, "For God and truth," is the only safe and certain way to satisfaction of mind during and at the close of life's journey and the prospect of life to come. With the utmost thought and right intentions how often poor mortal man falls into error! I had grand and, I believed, righteous views for the perpetuation of my business, with a view to promote the temporal and spiritual welfare of my native place, where I intended erecting extensive mills, baths, lecture-rooms, &c., but my schemes were brought to a close. I built a house there, and also on Riber Hill, as a central place betwixt my works at Lea Mills and the Institution, Matlock Bank. All appeared bright, both for the present and the future, but I was called upon to sacrifice moral principles, and sooner than do what I was sure would

eventually result in sorrow and regret, I gave up all my most cherished plans. And thus it is in the course of life, there are strong temptations to depart from a course God has appointed; but as sure as the sun rises daily, seen or behind clouds, so will bitter consequences come from any departure from the calls and convictions of principle and duty. What important lessons are recorded for us in sacred and secular history, but, alas! how few study them with a view to be guided by them! How many bright examples of what mankind is capable of are recorded—spirits who, in the roughest seas and the darkest nights of persecution and bodily infirmity, felt within and saw with their mind's eye the needle which is always true to the north! They steered by it with confidence, knowing God had ordained it as a guide unchangeable. Such spirits feel an irresistible impulse to follow where they cannot see the end; their indomitable nature leads them to a happy consummation of all their expected joys. Whether they come to that result in life, or, like the Apostles and John Huss, find it in the final act of death, their memories, and, what is more, the blessings they brought to their race, remain to benefit mankind for all future time.

JOHN SMEDLEY.

Riber Castle, December 2, 1872.

VIEW FROM MATLOCK BANK OF MATLOCK VILLAGE, HIGH TOR, MASSON, AND THE MIDDLE PEAK HILLS IN THE DISTANCE.



VIEW FROM THE MATLOCK BANK HYDROPATHIC ESTABLISHMENT.

FUNDAMENTAL ERRORS in the treatment of functionary disorder are constantly brought under my notice, and I am prompted every day to observe to newly-arrived patients how strange it is that mankind are not taught, as a primary part of their educational knowledge, the structure and functions of the body, in and through which all their faculties are to be developed and made available for life's purposes. From some reason not easily seen, the study of this all-important subject is entirely neglected in the education of youth; but it is to be hoped this will not be the case as society progresses in mental attainments.

As to the subject being too abstruse, and requiring opportunity for anatomical dissection, it is not the case. The why and by what powers the body lives and performs its functions; why and how the food taken nourishes the body and is taken up into it; how every voluntary action is performed by a direct telegram from the brain, by action of the will on the electric wires from that centre through the nerves of the spine, and which are continuous to every part of the body, internally and externally; how involuntary nervous action is made to go on independently of the will, as in the case of the lungs, the heart, and the eyelids; how the lowered vitality of muscular action of the veins causes obstructed circulation, and, filling the distended veins, telegraphs sensation of pain to the brain by pressure on the nerves of sensation, and hence what is termed inflammation; how, when food is taken into the stomach, it is there dissolved by the action of the gastric juice, when the electricity from the plexus of nerves placed at the pit of the stomach, and embracing it with its thousand threads, causes, when a person is in health, the chemical change of the food in the stomach, which food passing in its course into the duodenum, is there mixed with gall from the gall bladder, and with pancreatic fluid from the pancreas; how then the matter is passed into the small gut, where it is, by the aid of electric power, taken up by the millions of absorbents termed intestinal villi, and passing through knotted channels termed mesenteric glands, which again change the character of the matter on its way to the thoracic duct, which runs upwards and internally by the spine on the left side of the spine to the left subclavian artery, where mixing with the exhausted blood, it is again forced into the heart, and by it into the lungs, to receive the life-giving oxygen from the air—are all matters of such easy comprehension that youth would have far less difficulty in mastering than many problems they are set to solve, and which, when

solved, are often useless to them from failure of health and power to carry their knowledge into useful action. Neither would they transgress the Creator's laws as to diet and habits of life to the extent they do, had they been taught the consequences. The extracts and the statements in this work on these subjects are nothing new; they are patent to every young student in the medical art, but mostly a sealed subject to the public, who quietly, and with a simplicity of faith not to be surpassed by the devotees of any religious sect on earth, surrender their wonderfully-constructed body into the hands of the "profession," to be drugged, blistered, bled, and dieted as the London Pharmacopœia has directed the professional man to do for the last 100 years, with the addition of a thousand new fancies for drugging and torturing poor mortality.

Health, education, prospects, usefulness, and life are sacrificed to treatment, the nature of which the poor trusting human subject knows nothing but by its terrible effects. Mankind, however, love old institutions and established customs, and many thousands of millions will yet fall under the combined action of sedatives, purgatives, tonics, stimulants, blisters, and the lancet, probably to the end of time. (See *Index, Fatal Absurdity of Drug Medication*, pp. 222, 234.)

By way of illustration, I give a few instances of attempts at cure by the authorised practice, which came under my notice this week:—A gentleman, aged 35, from overwork causing indigestion and generally lowered vitality, had rheumatic fever, was confined to bed five weeks, drugged to no purpose, except to further weaken, when both the patient and the doctor became despairing at the results. The honest doctor told his patient he thought he had had medicine enough, and, as the weather was warmer, he had better give it up, and try change, fresh air, and our mild baths. Such a case would not have been in bed a week with our treatment, nor would ever have had the disease, had he known our simple home treatment; by keeping the body in order, he would have taken precautions long before, and prevented such a disease coming on. Rheumatic fever does not come on till, after greatly impoverished blood by cold or indigestion, the proper supply of serum is not supplied to lubricate the sheaths in which all the muscles are encased; and when this serum is wanting, the muscles move in sheaths more or less wanting this lubricating matter, and soon inflammation comes on, and excruciating pain by every movement. Instead of calomel, which further impoverishes the blood, or colchicum, which heats it, or opiates, which further deaden the system, we apply our No. 46, or 47, or 93, or 42, or 59, or 55, as stated in the Bath list in this work; and by these plans rheumatic fever is quite as easily cured, and as speedily and effectually, as a common cold, and without leaving the body, as by the ordinary medical treatment, a prey to a repetition of the disease, and very commonly heart affection.

When the body is weak, and when organs are so weak that they fail in their functionary action, medicine, blisters, &c., are given, which, it is well known, further weaken. I cannot at all understand this treatment. Disease is never *cured* by acting on such a principle, nor is it possible. A case came in this week of long standing disorder of the kidneys, upon which I thought necessary to have the opinion of a very eminent surgeon. After examining carefully the case, he agreed with me the disease was in the kidneys, and not merely lumbago, which had been supposed. The surgeon gave his prescription; in the draughts, alkali was the leading ingredient. Yet now, in tracing the nature of the disease, and why and wherefore pain in those organs, and the unhealthy urine, we come to the undeniable fact that the muscular action of the arteries in the kidneys is weakened, and unable to propel the blood through in the same vigorous manner as in health, and hence gorged veins, which, by the pressure on the universal telegraph system of nerves of sensation in every part, communicate the sense of pain to the brain, calling for help; but the only reply from the doctor is a blister, purgative, or opiate. Again, as to the unhealthy urine, the kidneys, which in health only select the proper urinal excretion, are, from weakness, unable to make the proper selection, but let out the

nutritive parts of the blood along with the urine, and this soon causes prostration. Now one would suppose the sound way to act in such a case would be to try to raise the electric and selective power of the kidneys; but, just as in the case where pain is present lowering remedies are prescribed, to keep down, it is said, inflammation, when inflammation is, in fact, the embodiment of weakness. First lowering treatment is tried; this inevitably brings the patient down. Then they say inflammation is subdued, when, in fact, only the remaining vitality is subdued; and, for fear the patient should sink, stimulants are freely admistered, which very soon bring the patient too high, and then lowering treatment and starvation is resorted to, and it is well for the poor body if it comes through such a scientific ordeal with life; it never comes through cured or scatheless. Nature, after this trial of strength, is sometimes left to her own remedy—good fresh air, quiet, and simple diet—and recovers. Then the aforesaid scientific treatment has the credit of cure; but had the patient a knowledge of the structure and functions of his body, he would never allow such absurd and utterly false principles to be tried upon him.

I could give hundreds of such instances of the mischief of drug medication, blisters, setons, issues, &c. The only idea seems to be to *make* any organs act which are inactive, and so purgatives and diuretics are given, to *compel* action of the bowels and of the kidneys and other organs, at the expense and totally regardless of the certain injury to the nervous vitality or electricity of the organs, and by which vitality alone they act at all.

A friend who had an attack of inflammatory disease, was, after ineffectual treatment by medicine, induced to try our plans, and very soon got well. About two years after, disregarding the warnings he had had as to his course of life, he was again suddenly seized with another inflammatory attack, but this time far more acute and painful than before. The surgeon was immediately summoned, and, to allay the pain, gave opiates freely. This certainly subdued the patient's sensibility to pain; but as soon as the effects of the opiate had in some degree subsided, the sense of pain returned, as the opiates had not strengthened the vitality of the system to remove their congestion, but weakened it; and so more opiates and stronger measures were resorted to, until, after the unequal conflict, Nature was finally subdued, and, as the first medical advice that could be got had been used, the body was interred with the satisfaction that nothing had been spared to cure; certainly nothing had been spared to conquer the vitality of the living frame, and, after several months' hard struggle, opiates, aperients, and blisters proved as effectual as Armstrong's biggest gun in gaining the victory and extinguishing life. Yet, from the total disregard of the necessary knowledge how to make the most of the constitutional power every individual is born with, the war against the delicate organisation of the human body still goes on; and well would it be for many poor lingering sufferers if the "*remedies*" were more potent, and finished them with less pain and in a shorter period.

Whatever tends to weaken an already weakened part never can give more vitality. Whatever attempts are made to *force* the organs to act without natural ability in those organs, is an insult to the Creative Power, whether the attempt is made by medicine or cold water, or any other unsound nostrums. The body, when low, must be nursed by *comforting* natural means, until Nature can rise and act, which it will be a pleasure to do as soon as there is any ability.

As to typhus, gastric, typhoid, or scarlet fever, small-pox, congestion of the liver, or inflammation, we never lose a case; such are treated at their own homes by bathmen and bath-women. A single 47 pack (Bath list) will arrest any of the above diseases at once, yet we see our friends and neighbours, who know and see the success of our treatment, die under the allopathic and homœopathic doctors' hands; their drugs cannot raise the failing powers of the body, but destroy it.

If the public were aware of the why and how purgative medicines act, they would hesitate before swallowing stuff which they would see could only injure them. It is well known that sudden fright or great prostration causes evacuation of the fæces and

of the urine, without the person having power, by any effort of the will, to retain them; and why is this? It is simply from the nervous vitality in the organs becoming so weakened that the will is powerless to prevent it; and precisely in the same way, calomel, and all other purgatives act by subduing the nervous vitality and conquering Nature, and this is called getting the bowels in good working order, and when carried out for any length of time, inevitably brings on serious or fatal disease, as the matter which should be taken up by the absorbents in the bowels to support life is forced through the body. I have a case now of hopeless dropsy of the bowels from the use of purgatives.

One day I was chatting with a doctor who had come to see our plans, when a friend called upon me with a young man about eighteen years of age, who had had rheumatic fever several times the last two years, and was reduced to a shadow, with bloodless face and a pulse throbbing in a manner I had not witnessed before. He had been drugged and blistered, and, as usual, all failing to cure, he was advised to give up all medicine and go to his home, a farmhouse in the country. The doctor examined him and said it was a case beyond the reach of any curative means, and that the heart was seriously diseased. I asked the doctor what he should do in such a case. He replied, "Only attempt to relieve by opiates and calomel, to soothe the heart, and keep the bowels in order." Now, on asking him what the physical effect of such action would have been, he said, "To lower the heart's action, and to reduce the red corpuscles in the blood." I remarked, "We should attempt, on the contrary, to get good action of the heart, and to increase the red corpuscles by all the means in our power." I took the patient into my Establishment, Matlock Bank, gave comforting, gentle treatment, and he soon got well, and now remains so.

In making these statements, I disclaim all intention of charging the legalised medical practitioners with either ignorance or want of principle; it is well known neither is the case; but that thousands of lives are sacrificed by their carrying out antiquated practice is evident to all who make any observation. The fact is, medical men stand so much in awe of public opinion that they dare not go out of the old track, although they are constantly seeing the inefficiency of their standard remedies; and they also frequently witness the efficacious treatment of their given-up cases. They feel, however, that their character for orthodox practice would suffer the moment they adopted any new mode of cure, although they are allowed to use new drugs, and of a terribly potent kind. The moment a legally qualified practitioner ordered a wet pack, he would be pretty certain to be packed off by his patients or their friends; they would say that he had either lost confidence in his own practice, or was trying experiments. And thus the medical practitioner has his hands bound, and sees his patient suffer or die, when he is cognisant of similar cases cured by other means.

Amongst many striking instances which have come, and are indeed continually coming, under our notice, the following is one:—I received a telegram one night from a large town in the midland counties, requesting me to send one of my best bathmen to a given-up case of typhus fever. Before daylight, I sent the bathman who superintends my Free Hospital to meet an early train eight miles off. He arrived at his destination about ten; found a youth of fourteen in bed, delirious, and given up by two medical men, who had been in constant attendance upon him, but could not turn the disease or stop the delirium. The nurse told the bathman it was useless to attempt to get perspiration—everything that could be done had been tried in vain. The bathman set to work, called for some hot water, and put the youth into pack No. 47. In a quarter of an hour the nurse touched the forehead; said no perspiration could be got. The man replied, "Wait longer, and you will see it come fast enough." In thirty-five minutes the patient was perspiring all over, and the delirium disappeared; he had No. 13 and No. 10, and was quite composed; the bowels acted and produced great relief. The stench when the youth was unpacked was almost unbearable, from the poisonous matter being withdrawn through the pores of the skin. Now doctors, however, came forward, said enough had been done, and that the youth was too weak for any more treatment. My man refused to stay, and came home. I said we should soon hear of a relapse, now they had stopped the applications to the skin; and in

forty-eight hours I had a telegram saying the youth was dying of inflammation of the bowels, which I was certain was not the case, but the morbid matter, being prevented going out through the skin, was causing diarrhœa, from which he would very soon have sunk. I sent my man again, but previously telegraphed directions for treatment. The patient again rallied, and came round slowly, but recovered ; he had, however, another relapse at home, but got over it. Now, if the doctors had allowed my bathman to continue his treatment a few days or a week longer, the youth would have been well in a fortnight. The relapses were entirely owing to the neglect of the skin, and not using our comforting bandages to the bowels, and to taking internal remedies, which are all at war against the vitality of the frame.

Such evidence should at least have excited the curiosity of the medical practitioners, to see by what means a fellow-creature's life had been preserved when they had given up the case ; but none of them have the courage to risk their reputation or their practice, and so the grand depurative agent—the skin, with its eight millions of pores to let out the morbid matter—is totally neglected, never soaped over, never bathed ; but febrile drugs to force the skin, and purgatives to "cleanse" the poor already relaxed bowels, are and always have been used ; and it is only where Nature has sufficient inherent power to *resist* the effects that the patient survives ; all weak die, or linger out a miserable existence. It should excite some spirit of inquiry when even the legal profession come and put themselves under my care—a manufacturer—and get well. At this moment we have the near relatives of medical practitioners going on well, who have tried their relatives' drugs in vain. When will mankind shake off superstition and prejudice, and judge for themselves? Not in our generation. I fear man is too naturally superstitious and wedded to old usages.

The *Echo*, in a laudatory leading article, October 24th, extols the height which medical science has attained, beyond the rough and often barbarous treatment of former times. The following two letters are specimens of hundreds I receive, and will show that neither now nor formerly have doctors any effectual specific for the cure of disease. We have specifics which we can depend upon for curing typhus fever, scarlet fever, congestion of the lungs and liver, and other diseases, as stated in this work.

Such cases as the following are striking testimonies to the utter helplessness of the doctors to cure. We are thankful that we were led into undertaking the grand work of rescuing our fellow-creatures from suffering and death. We have never failed to cure such cases with certainty, and we have had a large number of them the last twenty-one years. In no one case was there any risk of mortification by our comforting, natural, original treatment. We have had such cases become quite sound at seventy years of age.

"Dear Sir,—A good friend of mine, a large farmer, some six months ago met with an accident, causing an abrasion of the shin bone. He has been confined to the house ever since, and under medical treatment, but his leg, although to outward appearance almost well, will not heal up, small sores continually opening, and then disappearing to be followed by others. The doctor, I believe, terms it 'Exema.' This has been going on for such a length of time that my friend and his wife begin almost to despair ; but having heard of the success attending the treatment pursued at your Establishment, we have determined to communicate with you, and to ask you kindly to inform us whether you are of opinion that my friend's case is one in which you would have a reasonable probability of effecting a cure ; also what would be your terms, either for my friend alone, or accompanied by his wife, together with such other information as you may deem necessary. I may add that my friend is a gentleman (age fifty-two) of most abstemious habits, and this renders it all the more inexplicable that a cure has not been effected long ago. Kindly favour me with a reply by return if possible, and you will greatly oblige."

(*Murderous treatment.*)

"Dear Sir,—I do not know whether I am taking the usual course in the way of

asking your advice. I have been confined to my house for eight weeks, and to my bedroom six weeks; sometimes in bed and sometimes out, suffering from what my doctors call sciatica in the bottom of my back. My medicine is chiefly opium and camomile pills, and I have got that low that I cannot walk or stand straight. I want to ask one question, whether you can hold me any hope out at Matlock. My pains cut me in two nights and days, they are so severe. If you can hold out any hope, what would be your terms per week. I am a working man with four children."

(*The following case would have been easily restored to health by our means; and now he is coming to try it I have no doubt will get well.*)

"For a great many years I have been a sufferer from extreme debility, irritability, and nervousness, during which time I have tried everything I could think of likely to afford me relief; such as exercise, friction, early rising, and various kinds of diet. I have also consulted physicians and doctors, and taken medicines, but without any permanent good result. All my surplus income has been, from time to time, expended in this way, but only in vain, as I feel myself growing weaker and weaker, and more unfit for business every day, till I am now on the very verge of distraction and despair. I am twenty-nine years of age and unmarried. I follow the occupation of clerk, and out of a limited income support my mother and sister. The thought that I may soon have to give up my situation distresses me very much, and tends to increase my anguish of mind. The last physician whom I consulted informed me candidly that medicine would only afford me temporary relief, and prescribed marriage as the most likely thing to do me good. I would very much like to comply with his advice, but consider it would be dishonourable to do so in my present unfavourable state of health. I have felt some benefit during temporary absence from home—a fortnight's holiday in the summer; the change of air and scenery, and freedom from the cares of business, seemed to have a beneficial effect upon me. I have derived most benefit from adopting the treatment (so far as home conveniences, &c., would allow) as recommended in your valuable work, "Practical Hydropathy;" but business prevented me taking any baths during the daytime, consequently I have not been able to derive that amount of benefit from the treatment, as would doubtless be afforded if carried out to the letter. I have prayed to God to direct me to some source where I may be able to find relief, for I feel that I cannot go on much longer in my present condition. I do not know what the rules and regulations may be for the admittance of patients into your Free Hospital, but I have, in my last extremity, been prompted to make known my case to you, in the hope that you may be able to admit me."

(*Bungling and Butchering.*)

"I have been suffering from enlarged tonsils for some time. The doctors I have consulted have treated it as follows: Burning with caustic and chloride of zinc alternately; lancing, and applying tincture of iron while bleeding. At same time I have been taking medicine in the shape of a tonic, *i.e.*, quinine, &c. I am now advised to have them cut out, and before consenting think it well to ask your advice, as I was treated very successfully in your institution a while ago for another complaint. I should mention that the doctors are unanimous in thinking that the swelling has been there since I was twelve or thirteen years old (if so it is strange it was never noticed for seventeen years), and I am now about thirty. I suffer scarcely any inconvenience in swallowing food, but *do* suffer in swallowing spittle. They (the tonsils) are each as large as a walnut. Since I have been under the doctors I have had considerable pain all about my face. Do you think there would be much danger in cutting them out?"

(In the following case no comforting chest fomentations were used—nothing to remove the congested blood in the lungs. One of our bathmen would, to a perfect certainty, have saved his life in an hour or two.)

Death of the Rev. J. Purchas.—This clergyman, whose name has long been before the public in connection with suits in the Ecclesiastical Courts, and before the Judicial Committee of her Majesty's Privy Council, for alleged Ritual excesses in the mode of conducting the services in St. James's Chapel, Brighton, died last evening at his residence, 7, Montpelier Villas, Brighton. Mr. Purchas was seized on Tuesday week with a severe attack of congestion of the lungs, which, owing to the weak state of his general health, at once developed alarming symptoms. In fact, up to Saturday evening, he was expected to die from hour to hour. There was then a slight change for the better, and although his medical attendants held out but little hopes of his ultimate recovery, his friends were inclined to augur more hopefully from his continued existence, more especially as a marked improvement set in on Wednesday morning, which continued through the day. On Thursday, however, although the inflammation had subsided, the general debility returned, and the rev. gentleman never rallied. Mr. Purchas conducted two full services on Sunday week on the occasion of the harvest festival.—*Daily News.*

Typhoid Fever.—Lady Auckland, second wife of Baron Auckland, and second daughter of the Earl of Winchilsea, died at Caer House, Doncaster, yesterday morning. Her ladyship was attacked by typhoid fever about three weeks ago, and on Wednesday last coma set in, which, with effusion on the brain, caused death. She was only married on the 6th of August last.—November, 1872. This is another case of life lost, notwithstanding Dr. Gull and other M.D.'s specifics for the cure of such cases. One of our bath-women would to a perfect certainty have saved the case. So little do we regard these terrible fevers that this very week we have had a bad case of a servant moved into our Hospital this November weather in an open carriage four miles, well wrapped up, and at once gave 47, and now she is out of all danger, and will be quickly well. I have only to repeat we have never lost a case out of the great number we have treated at their homes or in our Free Hospital. We do not admit infectious cases into our Institution.

(The following case would have been easily cured by our knee treatment (see Index), *but the bungling, ignorant course of the doctors has probably ruined the young man for life.)*

A year and nine months ago I had an accident in a gymnasium. I was hit *very severely* by a swing board—that is, the board attached to a swing to sit or stand on—*across* the leg, about two inches above the knee, rather on the inside of the right leg. It caused it to swell, and pained me for a little while. The first doctor I went to, our family doctor, said the swelling was congealed blood, gave me an ointment to rub the knee for to absorb or disperse the congealed blood, and ordered me to rest. The swelling went less, but harder. I was not satisfied with this doctor, and I went to another, considered the best in the town for such cases. He considered the injury to be a ruptured muscle, or a muscle that had *shrunk* one part up and another part down. He said he could cure it, and that it was not necessary for me to rest, unless I was compelled to be immoderately active. The knee was plastered over, and a bandage applied to keep the plaster on. It went gradually better for seven months, the lump subsiding, then a change occurred—my leg always ached towards night. I told him of this, and his answer was, "The bag that held the water in the knee was inflamed." It went gradually worse. I decided to change again, having been attended by this practitioner twelve months by this time. I went to the Oldfield Lane doctor, Manchester,

the next. He told me the muscle could not be damaged so long, and I be able to walk about. He said there was fluid in the knee-joint. He made an issue on the calf, inner side of leg, to draw this fluid off, and gave me an ointment to rub the knee with. I have now been under the last-mentioned doctor about six months, am going on crutches, my knee very weak, slightly puffed round the cap; the little lump has returned, perceptible to the touch only. This doctor thinks it is only the skin on the bone that is elevated. So that this little rising, feeling now about as far round as a penholder, and 1½ inch long, in the place where I was hit, has been three things, congealed blood, shrunk muscle, and skin of bone elevated. I think the plastering and bandaging the knee tightly, adopted by the second doctor, has damaged it. The knee swells when I travel. My age is 25.

(*The October number of the* Edinburgh Review *has an elaborate laudatory article on the vast progress in medical science. The following is a pretty strong elucidation of the science of the present day. More senseless, barbarous treatment never was practised in any former times.*)

"My father desires me to write you an account of his ailments, in order to see whether by going to your renowned establishment he might in any wise recover some of his former good health. Last June twelvemonth he was attacked by shortness of breath, but by the help of the doctors here, acting under the advice of Dr. Stokes, of Dublin, who prescribed calomel as the only remedy, he recovered. After a short time, however, he was again attacked more violently. To such a degree was he short of breath, that we had to help him into the garden with his breast bared to the breeze. During the attack, which lasted about an hour, but sometimes more and sometimes less, he perspired very much. By the aid of ether he was often kept from fainting. Again he underwent a course of calomel, and after a time recovered so as to be able to walk about; still he did not regain his usual strength. The sure forerunners of every attack were the thick, yellowish water which he passed, and a feeling of fastness inside the stomach, his heart while he was sleeping beat in a *fluttering* manner. But, strange to say, his pulse all the time beat pretty regularly. In the latter end of last August, he was again attacked, from which he has not yet recovered. Before he became sick he was very stout, but now he is reduced (to use a common expression) to a skeleton. I should have told you that during these attacks the great pain lay in the stomach, and that by holding his hands tightly against it he thought he relieved himself. Violent pains also he had on the right side at the lowest rib (*the certain result of calomel*). During the first attacks he was altogether treated for heart disease, but lately another M.D. discovered that the left lung was in a great part "dumb," and that the liver was also affected. From the effects of taking so much medicine of every kind the digestive powers are almost destroyed. During the last week he is just able to get across the room, if he tries to do more the roughness of breathing comes on; the same effect is caused by his taking a long draught of anything. While under the effects of calomel he sleeps a great deal propped up in bed. He generally feels better by sitting in an inclined position, with his head as far forward as his knees. After the first attack his legs were greatly swollen. This generally happens from the effects of sitting so constantly, as is supposed, and from one of them just above the ankle a piece of flesh fell out—erysipelas the M.D. said. By the above particulars, you see there must be some complication of disease which is only furthered by the treatment. If you can hold out any hope of restoring him, at any rate so as to make life worth living, he would immediately start for your establishment. All particulars required will be given. Hoping to receive a favourable reply, which we will be expecting. His age is now sixty-six. During all his life to the illness he was a very strong, powerful man."

(*Cholera in India. The following extract from the* Times, *October* 29, 1872, *shows that calomel, morphia, stimulants, &c., all lowering and destroying, are the only nostrums the faculty can think of. We cannot pronounce our treatment a certain specific, from not having had any extensive experience; but when cholera was epidemic in this country many years ago we cured some severe cases. Our* 47 *Bath list, our* 48, *on* 169¼, 220, *&c., all tended to raise vitality and bring out perspiration.*) (*See Index, Cholera.*)

Since the first outbreak of the disease to the latest returns, there have been 750 cases of men, women, and children among British troops, and of these 478 cases have been fatal. In some instances the progress of the disease was dreadfully rapid, and if the year had been a little less advanced, there is every reason to believe that these large numbers would have been materially greater.

The amount of care and patience directed to the subject of cholera by the medical profession is enormous, but, so far, little seems gained beyond an analysis of symptoms and of other features of the disease. Nothing satisfactorily probable has been arrived at as to the cause or cure of cholera.

In all, the regiment lost thirty-nine men. The type of the disease was, the report says, most virulent, collapse coming on and death ensuing after a very few hours' illness. Among those who recovered, a sergeant, having got over the primary symptoms, had the most extensive crop of boils Dr. Cowen ever saw, and "was nearly carried off by their pain and the sleeplessness which they induced." [*Our packs would have quickly cured these.*]

Then we have the unpleasant statement that, as far as treatment went, the medical officer in charge and all under him would "sum up their experiences and observations in the one sad word, 'useless'—at all events when the disease had passed beyond a certain stage. Every kind of recommended line of treatment—the saline, the alkaline, the derivative, the stimulant, the alterative, the expectant—were tried and all signally failed." Dr Cowen states that there is no discoverable cause for the disease. The men had neither been eating nor drinking to excess, there was no suspicion of infection, and the hospital afterwards accommodated native troops without a case of illness. The assistant-surgeon in charge made a like report as to the utter impossibility of any conjecture as to the cause of the disease, but he states that the largest number of victims were from among those men who from long residence in the place or other causes had become deteriorated in health. Among the recuits of five months' Indian service, four were attacked, and all recovered. The officers had, with one or two exceptions, had short service in India, or had been at home since the arrival of the regiment, and not one of them was attacked. All this is important; but I do not know whether your medical readers will say that it adds much to their knowledge of the causes of cholera or the remedies for it. The exact treatment, however, is worth appending. It runs as follows:—

"Calomel and opium, stimulating astringents, the oil, alkaline, saline, ice, chlorodyne, brandy, hydrate of choral, acetic acid, pepsine, hypodermic injections of strong solution of ammonia, and various diffusible stimulants. Of these, calomel and opium, the stimulating astringent, cholorodyne, and brandy, and the diffusible stimulants seemed to give most relief. The first dose of calomel and opium was five grains of the former and half a grain of the latter, and this was followed every two or three or four hours, according to circumstances, by two grains of calomel with aromatic powder, opium being contra-indicated in these cases. Stimulants were also given in moderate quantities, half an ounce of brandy to a bottle of soda-water or a pint of beef-tea, ice, soda-water. Strong beef-tea and chicken broth were freely given, and, when thought advisable, champagne, claret, and lemonade were used to support the system and allay thirst. During the reactionary stage the usual remedies were adopted to control the congestive stage according to its various degrees of severity."

(*It is sad to think of a young man being a cripple for life from the inability of the doctors to apply scientific remedy. Utter helplessness of doctors to cure; our treatment would have quickly cured this case.*)

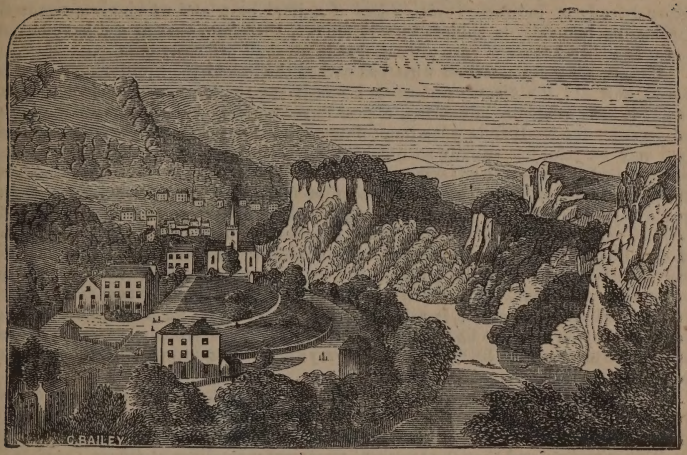
I am a young man, just past twenty-three years of age, and am suffering from a stiff ankle-joint. About fourteen years ago I sprained my ankle, was laid up, with a

doctor attending me for nearly two years. I gradually grew out of it, until I could walk very well, with the exception of a stiffness in the joint; but in the spring of this year my foot got very stiff, weak, and painful; since then I have been attended by two doctors, and have been almost entirely laid by.

"I write these few lines to you hoping you and your partner are enjoying good health, but I am very sorry to inform you that I, T. Sutcliffe, was taken very sudden with inflammation of lungs and pleurisy. I had to send for the M.D. When he came I had a poultice of linseed and chillies round the body, and he told me to keep on with the poultice, but send down for some medicine; but I told my wife to put the physic into the fire. I began to get worse, so they prevailed on me to take some medicine. I was in a rambling state of mind. The M.D. wanted me to have some leeches on. I asked him was there nothing that would do as well as bleeding. He said, 'Keep it red with mustard plaisters;' I said I would keep it red. The day after he wanted me to have a blister plaster on for about twelve hours; I said, 'Doctor, that is worse than the leeches.' I told him that I would have a mustard plaster on regular, before having blisters. It is nearly a month since, and I came down-stairs for the first time yesterday. I am so weak that I could not come down without walking-sticks, and it was hard work then. The doctor says that I should have a pint of bitter ale a day, I am so weak, and it gets up my strength; but I have little faith in bitter ale. Dear friend, give your opinion of it, and send me a little advice."

"It is with unfeigned gratitude I take my pen to give heartfelt thanks to you and Mrs. Smedley for the prompt attention you gave to my request to send me a nurse for my daughter, and to state that, under God's blessing, the treatment has been very efficacious in the removal of the disease, and although I have practised Hydropathy for twelve years, I was myself astonished to see the effect which immediately followed the application of treatment. I pray the Almighty One to give you and your dear partner in life the enjoyment of perfect health, and long to spare you both, that you may follow in the footsteps of your blessed Master in healing the sick, and alleviating the sufferings and distress of your fellow-men. Allow me to express, on behalf of the nurse, Mrs. Hall, my great satisfaction both as to her qualifications as nurse, her general deportment, and Christian character, which is a great comfort and pleasure to the family where she may chance to reside. Would that we had Hydropathic hospitals and family nurses in all our large towns! I trust the day is not far distant when they shall be established over the length and breadth of the land.

"It is with the greatest of torture of mind that I address these few lines to you, asking for advice under very peculiar circumstances. For the last eighteen or nineteen months I have been troubled with having my seed flowing from me during the night-time, and whilst I am fast asleep, without feeling anything whatever till morning, or having any pain. Now, I know, the first thought that will cross your mind will be, that I have brought it on myself by self-abuse; but I can truly say that I have not. When I was about twenty-one years I began to feel rather weak and low-spirited, and it was then that it begun. I told my parents at the time, and I put myself under Dr. ——, of B——; was under him for four months, taking physic all the time, but was gradually going worse. So I gave him up, and begun with a Dr. ——, of ——, too. Was under him for close on six months without receiving any benefit, when I came across one of your books, which I eagerly read, but could not find my case in it. I have kept my body in good order, being twenty-three years of age, about five feet three inches in height, and six score four in weight; am a teetotaller and an anti-smoker, so that I can't tell what to try now; but knowing your great kindness and liberality in cases of sickness and distress, I have therefore taken the liberty of asking your advice, as a last resource. Knowing the gravity of my situation, I earnestly ask you to consider my case, if you can make it convenient, as soon as possible, as I have grown quite sick at the prospect before me, if I don't get cured before long. I hold a very responsible situation in one of the healthiest and best ventilated mills."



MATLOCK BATH, FROM THE WILD CAT TOR.

ALL THE STATEMENTS AND QUOTATIONS in this work are drawn from the best medical and anatomical works of the present time. I have not advanced any new theories as to the structure and functions of the body. Doctors are fully aware that there is nothing new to be discovered as to the functional action of the body of any consequence. But it is against the antiquated and ruinous system practised for restoration of health I protest and show to be destructive instead of restorative.

The following incontrovertible principles we have from the first acted upon, hence our uniform success in relieving or curing disease. I was led to see the necessity, in cases of inflammation, fever, or stoppage of functionary action, of applications which would produce immediate reviving effects, without interfering with or deranging the internal economy, and hence the peculiar local appliances I have invented. It is the want of such means in medical practice that life is so often lost. Our applications cannot possibly do injury, and strike at the cause of the ailment at once. The chapter, farther on—"Neuratic Inherited Temperament" (see Index)—contains matter for the deepest consideration by every human being. The poor Prince Consort, Cobden, the Prince of Wales, Judge Willes, and many others I name in this work, required instant means to equalise the circulation, relieve congestion, soothe and give sleep; this our methods always do, certainly and quickly.

Poor Judge Willes, driven to madness with work, opiates, and stimulants, might well have the glassy eyes—the certain result of opiates—his secretary spoke of, the irritability and forgetfulness, &c., contrary to his fine nature and intellect when in health. To get sleep the Faculty use only what stupefies, when our external treatment produces natural sleep. I have no doubt we have saved numbers of similar cases from suicide.

Remarks on Medical Progress, by Dr. John Stevens.—"From the harmony which exists throughout the human system, we are led to the conclusion that its whole action depends upon the operation of some one principle—say the principle of heat—and however much the idea may be derided, it is just the substance of what they tell us, 'that life is a forced state, depending upon the operation of stimuli.'

"The fundamental principle is that all disease originates from the same cause, either directly or indirectly—viz., a loss of animal heat, and which gives rise to the various ills humanity is subject to. It follows, therefore, that it can have but one direct or indirect mode of cure; what that is we shall presently inquire.

"First, we must ascertain what has caused the loss of the equilibrium—in other words, how did the disease commence? was it the result of some immediate cause, or has it been gradually advancing, almost imperceptibly, with time, until we can no longer enjoy life? If from some immediate cause, it is then simply an acute disease, and may be removed equally as quickly; if not heeded, or improperly treated, it may go on until it settles itself somewhere, either in inflammation of the eyes, rheumatic pains, or affections of the nervous system, or it may fall upon some vital part, and lead either to immediate death or to a gradual decay and waste of the whole body. Loss of heat, that is, cold, or obstructed perspiration, is the primary cause in either case. The remedial process should be to equalise the circulation, relax the contracted tissues, and open the pores in the former case; and bear the same principle in mind in all others. We unhesitatingly affirm that disease is not so difficult to comprehend as most people imagine; strange forms of it, we admit, do sometimes arise, and which may not be treated successfully, but the ordinary everyday disease, that day after day is to be found almost everywhere, is as entirely within our control as are the cravings of hunger and thirst.

"'The only way to keep the body in a healthy state is to make use of such articles of food as have been proved by *observation and experience* to be adapted to accomplish the end.' After this, shall we be told that the types of disease are continually changing, and that the 'medical treatment must differ at different periods' to meet these changes? Why not apply the same reasoning to food and hunger? Food taken into the stomach nourishes every part; an injury of any one part, an obstruction of any one function, injures the whole frame. A man takes a dose of arsenic, and dies; another, corrosive sublimate, and dies. What does it prove? simply that those individuals violated a single physical law, and death was the result. Many medical men have written upon the importance of a due observance of the physical laws, and yet there is hardly a single disease in the whole catalogue of human ills in which they do not recommend a violation of these laws in order to effect a cure. How long will this absurd theory be tolerated? It is said that 'Providence has a certain way of dealing with the errors of mankind, which is to leave them to the consequences of their own mistakes.'

"The vital principle or power of life, whatever may be its constitutional essence, is undoubtedly an unit. That this vital principle is affected in some way in disease we take for granted—viz., the proximate cause of all disease consists in a loss of vital power or heat, and a deficiency in the performance of functional action. We admit of no exception; whether a diseased organ has increased or suspended its action, its proper function is not performed.

"Let us suppose a case of simple or acute fever: the digestive power is lost, of course nutrition does not go on, the secretions are suppressed, the absorption of worn-out matter or particles is suspended, but action of the sanguiferous system is much increased, and there is now danger of disorganisation. In order to reduce the excitement, which must, if not arrested, end in inflammation of some vital part, and thus terminate in death, we would not use the lancet, nor administer opium nor mercury, neither would we leech, blister, cup, nor starve, but would at once open the pores. Through their million mouths the enemy should be assisted to escape; the pulse would soon lose its velocity, the crisis would be past, and the sufferer saved from a lengthened illness, or rescued from a premature grave. *To subdue the vital powers,* therefore, is not a rational practice; the physician should ever assist nature.

"Mr. S. Key, the first surgeon of the present times, writes—'The higher the class of practitioner and the greater his experience, the more does he lean on nature for his guide, and less and less confidence does he repose on the curative influence of medical agents. The sound practitioner of medicine follows nature as his polar star;

if she be distorted from her path, he endeavours to conciliate her by gentle means to a return; he studies her movements, and tries to imitate them.'

"It only requires the exercise of an unprejudiced mind to convince every person of common understanding, that whatever substance possesses the property to reduce the living power in man is wholly unfit to restore that power when reduced by disease.

"In all cases of disease, we hold, the vital heat is diminished, the digestive powers are enfeebled, and morbific matter accumulates in the system. If these evils can be removed the patient is restored to health, otherwise not. If, therefore, we can command remedies which are best suited to remove those evils, sustain the patient, and prevent the further progress of decay, then we possess one general mode of treatment, adapted alike to all diseases, and sure to cure all, if in their nature curable.

"Lastly, to sum up, we maintain—first, that the *principle of life is heat;* in other words, that internal vital heat is the agent on which the operations of nature depend; secondly, that all disease is in its nature opposed to life, and therefore diminishes the vital power or heat of the body; hence a *diminution of heat is disease;* and, thirdly, *that the absence of heat is death.*"

DERIVATIVE TREATMENT.

(*From Mrs. Smedley's Manual.*)

By this term I mean turning the course from the diseased part by "treating" the stronger members, and so letting the strong bear the infirmities of the weak parts. It is too often the case, if not always, that medical men fly at the seat of disease, which is already much weakened by the disease itself, and thus, unable to contend with their remedial measures, and when Dr. Nature, in spite of the neglect of the above derivative efforts, struggles to bring its own, and really *only* healing powers, to bear upon the weakened part, oftentimes the acute form has, through their remedies, advanced to the chronic state, and completely defied both Dr. Nature and the legal doctor too. To make this subject more practical I will name some cases, and show the style of treatment which should be applied, of course varying much in the exact power of the patient prescribed for, as the great secret of success in cure is to carefully *balance* the strength of the means used with the *vis vitæ*, or power of life, in the patient. For instance, inflammation being from congested or impeded circulation of the blood, immediately put a poultice, as 220 (Bath List), or hot foment pad on the affected part, and then use the stronger measures on each or any of the unaffected parts, so as to entice a more rapid and free amount of circulation there, which will speedily be found to act most favourably on the diseased region, and thus remove the congestion. The limbs being non-blood-making organs, can be made most useful in this derivative work, especially the legs and feet, with treatment such as 141, 143, 144, 137, 153½, 153, 157, 214, 153¼, or 220. Spinal also on same principle good for general nervous irritation of the system, see 115¾, 127, 123, 128, 122½, &c. When requiring to keep on any of the mustard treatments, may apply a good deal of linseed with it, and when continuing the 141, which is very useful in inflammatory diseases of the bowels, chest, &c., spread or sprinkle the mustard inside the wet cloths, as named in the above. Diet also cannot be given, as is too usual by routine of similar diseases; but great care and judgment should be taken to discover what is the usual diet which agrees with each individual in the general way, and then select from these, of course avoiding strictly anything positively injurious to health, and strictly abstaining from stimulants, or medicine however simple. By this course we have saved many cases where death would have been the result without its application.

Stomach Complaints and Constipation of the bowels are the principal plagues of human life, and the ordinary means used as remedies are unfortunately diametrically opposed to Nature's healthy operations, as indeed all internal remedies must necessarily be so. Having been ill, about twenty-four years since, and hopeless of restoration by the ordinary medical practice, I was led to try the cold water cure, and although

it laid the foundation of my restoration to health, after many months' suffering, I saw in a good deal of the treatment means were used without reason and opposed to the natural restoration of the low state I was brought to. I recovered my health in two years, the latter part of the time by adopting my own views, and without the least idea what it would lead to I opened a Free Hospital for our work-people, where to this time upwards of five thousand have been restored to health, or saved suffering amputations and most of the great train of diseases humanity is subject to; and not only this, but they have been taught how to live in comfort, and meet casualties with easy natural treatment. My family motto is, "TRUTH IS GREAT, AND WILL PREVAIL," and so we found it to be the case with this entirely new method of treatment; until now, after twenty-one years' practice at Lea Mills and Matlock Bank, my wife's failing health compels us to resign our charge to a physician who has practised our system; and with the complete organisation we have established, we believe he will go on improving the modes of cure, having the advantage of a regular surgeon's and M.D.'s education. The work was in a manner forced on my wife and myself, without the least idea it would grow to its present extent. Above twenty-five thousand male and female patients have been received at the Matlock Bank Institution and Lea Mills, besides the many thousands treated at smaller establishments set up by our former bath attendants at Matlock Bank and other parts of the kingdom. The system of treatment is entirely original and of our own invention. It is not the cold-water cure, or hot-water cure, or Turkish bath cure, or the mercurial bath cure, or any of the single nostrums propounded. We have never used any medicine of any kind: no leeches, lotions, blisters, setons, or any of the terrible array of the doctor's shop. Stimulants and tobacco are strictly prohibited. All our appliances are external; no cold water, except for persons in good health. It will be seen by the Bath list the novelty and peculiarity of our system, which has been such a great success, are local applications, without immersing the whole body in water, or in many cases not requiring envelopes of the whole frame, and the appliances are such as can be easily applied at home.

SUBCUTANEOUS INJECTION OF MORPHIA.—Since admitting a poor man into my hospital, paralysed in his legs, and ruined for life by the vaunted discovery of this certain ruinous practice, I have had several letters from sufferers, mostly persons advancing in age, who, from want of vitality, or from exposure, or luxurious living, have been attacked with rheumatism, tic, or sciatica, have, when suffering, sent for the doctor, and, as usual, surrendering their reason and common sense to his prescription, never inquiring what the nature of the stuff he was going to use, or the philosophy of its bringing healthy action, have allowed him to commence this destructive practice, almost impossible to leave off, and always causing eventually frightful effects—delirium, stupor, and of course never any permanent benefit. Talk of science! Why, what can be farther from it than to deaden an already deadened part? I know now of several friends in a pitiable state; they will never get better or ever be free from pain longer than the momentary action of the drug. Thus it is when the poor human frame begins to get weak; the doctor comes in and finishes the career in pain and misery. A fortnight since a friend of mine, apparently hale and hearty for his age (sixty-four) forgot his age, exposed himself to cold, brought on inflammation of lungs. Two doctors attended him, the newspaper says, "*assiduously*," with their leeches, blisters, &c. &c., and in a few days his earthly career was closed. The same with Professor Maurice, who died in an exactly similar manner. Our treatment of inflammation would to the greatest certainty have saved them both And my father, too, who rose on Monday morning, February 5, 1840, a sound, healthy man, stood in a draught, which brought on bronchitis, and in a month he died with much suffering. Such cases at such an age, as well as liver and other diseases, are killed with certainty by the barbarous medical practice. A few hours of our treatment would have saved my father's life to a certainty. I have just received a letter from a patient who came formerly with jaundice, almost black with it, and I thought too far gone, as his

doctors declared, to get over it; but our outward appeals to nature brought him round to a sound man seven years ago, and, by the knowledge he got at our institution, he now states how he has saved his mother's life twice from inflammation of the lungs, at the age of seventy-four, by the application of our treatment.

It is painful to me to think how my only brother, at the age of twenty-one, was destroyed by barbarous and utterly unreasonable, unscientific treatment. He was a remarkably healthy young man, rather liable to constipation of the bowels—for which, of course, the usual aperients were given by a doctor of high repute. This plan weakened the action of the bowels until congestion of the brain came on and killed him in a fortnight, destroying my only companion and helper in the business, cutting off all our plans of partnership, and prostrating my father and mother's spirits for life. It would have been a very easy matter, with our outward treatment, to have saved him and kept him well yet, now forty-five years ago; victims are still sinking under the fire of these terrible engines of destruction, directed by the first medical men of the day, as well as by all the faculty, high and low. This day's paper (May 4, 1872) records the death of Mr. Robert Gladstone, from heart disease, suddenly, and states he had for some time been liable to the attacks. The death also of Inspector Baker, the Queen's special attendant at Windsor Castle, is reported in the same paper from the same cause. Now, I have had extensive experience in such cases, and have the gratifying recollection of delivering more than I can call to mind from such a fate. Six months ago I called to see an old valued friend of mine I had known well forty years. I had not seen him for ten years. I was shocked with his changed appearance. He had such an herculean frame, yet compact, and could stand any amount of work, that I could not at first imagine what could have brought his vigorous countenance and erect frame down to the apparent wreck I saw, as he was only about sixty years of age; but when he told me he was taking medicine for heart disease, by the directions of two eminent London M.D.'s, who also allowed him a little whisky and port wine, the mystery was solved at once. I brought him with me, stopped the "scientific" remedies, or rather poisons, and all stimulants (these or tobacco must be totally abandoned), and in two or three weeks he forgot all about dying of heart disease. Such a rescue would have been the case with certainty with Mr. R. Gladstone and Inspector Baker; but when, from age or hard work, or rheumatic fever, the heart's action is feeble, or irritable, or intermittent, and the fine compounds (digitals, &c. &c.) are administered to "quiet" the heart and lower its power, no wonder it stops. Our outward applications have prolonged life where there has been serious affection of the heart in more cases than I can record, and made life comfortable to a good age. Woe be to the hard-working commercial or professional man who gets into the doctors' hands for heart disease. Of course many die of weakness, of a worn-out heart; it is the main-spring of life, and with hard wear and age will get weaker, and give up the struggle in time; but this is not disease, and if persons who are sometimes uncomfortable with heart irritation would adopt our simple external remedies, and directions for diet, and absence from stimulants, they would at any rate die a natural death. What a comfort to know one's state. If I had not I should have been killed many years ago, pulled down with typhus fever, brain congested, heart irritable—before I knew anything of our methods of cure. A London M.D. proposed to put a seton in top of my spine and give me a course of medicine—mercury, of course—but somehow I could not fancy that mode of curing. I did not know why, but I could see no good reason for it; so I escaped. This was twenty-three years ago, and since that we have been instrumental in saving many thousands of our fellow creatures from suffering and death. With our incessant work so many years, and confinement all winter and summer days, with patients, and free hospitals, and Mill morning to night, no holiday for years together, and never a Sabbath free, my wife and myself are of course worn, and may die of heart disease or used-up nervous power—and indeed we should have done so years ago if we had not known how to treat ourselves. Now our work is done at the

Institution, except any help Dr. Hunter wants, we hope to get some time for rest and reflection before our course is ended. That our labours will shorten our lives is certain, as there is only a certain amount of wear in the frame; and if an engine is made to go double time it cannot wear so long as by ordinary use. Still, it is a pleasant thought to reflect that we have been successful in our work; and it is, we think, better to die a few years earlier than live a life mere encumberers of the ground.

STOMACH COMPLAINTS.—These proceed from a variety of causes, and great errors in treatment are often committed from want of a correct knowledge of what has caused the stomach to be out of order. In a great number of cases the cause is an over-worked brain. The vis vitæ, or electricity, in the nutritive nerves is drawn from its proper office of causing the necessary chemical change in the chyme or dissolved food in the stomach, and consequently acidity takes place. This irritates the coats of the stomach and duodenum; it passes into the bowels, where it is taken up into the blood, and this imperfect matter makes imperfect and poor blood and bad tissue; this imperfect blood circulating through the body, and coming into contact with the delicate nervous system, irritates and impoverishes the nerves by not affording healthy material for their support.

When the stomach is "out of order," persons commonly resort to drugs to restore it, which only give temporary relief and increase the evil by forcing the stomach to act; to be followed by proportionate reaction. For example, when there is acidity, alkalis, soda, magnesia, &c., are resorted to to correct the acidity; which they will do so far as the then contents of the stomach is concerned. But as all alkalis lower the vis vitæ or electrical power of the nutritive nerves, the relief is only temporary, and the mischief more permanent; as is experienced the next time food is taken into the stomach. Thus chronic disease or cancer of the stomach and duodenum is often the result, and the individual cannot live without a constant supply of alkali, which after a time ceases to give relief; and a miserable prolongation of suffering succeeds, until death relieves the sufferer.

Whenever I have acidity, which I have sometimes from over-work, I have a mustard plaster over stomach, then flannel, and hot stomach can, as long as I can bear them; 234 in night, 233 day, or 236 dry in day, 237 rubbed over stomach; or if the above cannot be got, 163 wrung out of cold or tepid water several times in the day; and have a thick flannel bandage over in night. (See Bath list for these numbers.) I go on taking plain food, without any stimulants or condiments, mustard, pepper, or pastry. Many persons are fidgety or anxious if they perceive acidity in the stomach; they are never at rest about it; first taking one remedy, then another, now soda, then brandy or bitter beer, until they set up real chronic inflammation of the mucous membrane. I bear with acidity until it goes off by rest and diet and these simple appliances, and if even of some continuance no injury will result. The constant attempts to cure acidity by any other means than raising the power of the nerves of the stomach by natural means, without stimulants or medicine, only increases the nervous irritation. (220,169½ in night good, and the less food the better.)

ONE GRAND ESSENTIAL POINT to attend to is to keep warmth on the surface of the stomach. As I have before frequently remarked, life leaves the body last at the *solar plexus*. (See cut of the stomach.) When in health I always use 235 (bath list) dry night and day, and sleep with a small feather pillow hugged to my stomach. By these simple, natural means of keeping up warmth life is prolonged; but by trying to keep life in by stimulants, life is to a certainty shortened.

Tobacco and opium are very fruitful sources of stomach disease, lowering the vitality, causing acidity and flatulence, becoming also tyrannical habits, exceedingly difficult to shake off, until they have incapacitated the poor stomach and nerves for any healthy action. The mucous membrane lining the stomach is

first affected, as shown by the red and loaded tongue; then, of course, the inflammatory action is communicated to the nerves, and is shown by the white tongue, the brain having become implicated by sympathy. The mucous membrane lining the stomach being continuous in the duodenum and bowels, and passing up through the gall duct into the liver, and also to the pancreas, all sympathise with the part first affected in the stomach. This goes on increasing for a long time without great inconvenience if a person has a tolerably stout constitution, but some day an excessive dinner, or extra quantity of stimulants, or severe cold, sets fire to the train, and all the inflammatory action then concentrates on the weakest part, be that the lungs, liver, stomach, or bowels. Bleeding, blistering, and calomel are immediately and actively employed to reduce the inflammation, and with it the power of life; and the vitality of the blood is reduced, often never to be restored again. Fomentations, body pack, simple diet, and rest, as before mentioned, would seldom, if ever, fail to accomplish a cure, and leave the patient uninjured. (See 50, 69, 70, and 78, Bath list.)

When a person's tongue is unnaturally red, cracked, and fiery, there is great danger to life, ready to be developed: taken at once, by rest and simple treatment, the cause may be removed; but in all cases where this state of tongue has been allowed to come on, a much longer time will be required to effect a cure: and when the tongue is habitually loaded, it indicates that there only wants a little exciting cause, in the shape of a cold, or excess in eating and drinking, to bring on typhus fever. Administering purgative medicines when the tongue is not clear, aggravates the mischief tenfold. The most reasonable methods for cure is, stimulating the skin to perspiration by hot and tepid dripping sheets, short vapour baths, followed by 14 or 15, or 18, 19 bath list; or No. 50 or 69; at the same time drinking cold water by sips; avoiding tea or stimulants, and little or no flesh-meat; regulating the amount of the treatment by the strength of the patient, and giving nature time to act. (See index for Home Treatment).

The great variety of causes of stomach disease makes it impossible to lay down anything more than a general principle of treatment. It must always be borne in mind that in these cases there is a depressed vitality of the whole frame, as the great plexus of nutritive nerves connected with the stomach, which are the primary source of digestive power, are in contact with the inflamed mucous membrane. The body must be nursed into vitality by the most attentive means, and in accordance with its delicate structure. All art can do is to be a nurse, and a very unpresuming one; watching symptoms, and paying regard to the minutiæ of nature's indications. If we are to be in health, we must obey the laws of God has laid down as conditions of health; eating to live, and not living to eat.

Colic, Pains in the Stomach and Bowels.—Immediately apply 69; and if that does not quickly relieve, apply 98, well rubbing bowels when in it. After 98, use 76 or 77 till quite composed and comfortable, previously putting on 169 or 163¼, with flannel wrapper over, also 153¼ often as can be borne. 220 sprinkled with chillies or mustard, and 169, or thick dry flannel wrapper over all in night. The point to be aimed at is to get all the external warmth possible over the stomach, and keep it up till well—73½, 73¾ good.

Stomach Disease Diet.—From very extensive experience in these cases since our former editions were printed, we have found it very difficult to prescribe a specific diet for all cases, except so far as warning patients against what we are sure is injurious. The grand point, first, is to prepare the weakened organ, and not burden it with food; when weak, it has not power to digest a usual meal, nor to get rid of it properly. If there is not sufficient vitality in the plexus of nerves at the stomach to cause the proper chemical change in the contents of the stomach, the contents turn acid, whatever the nature of the food taken, and from acidity goes on to fermentation, next the generation of

gas; hence flatulence, eructation, and wind through the bowels. Soda and other alkalis, or magnesia, or stimulants, are often taken for this, which only give momentary relief and aggravate the mischief; all alkalis—soda, saline draughts, soda-water—lower the vital power of the stomach, and often bring on incurable chronic inflammation of the mucous lining; and cause congestion and disease in the stomach. In case of weakness or diseased stomach we prohibit all stimulants, pastry, mustard, pepper, or vinegar, pickles, raw apples, plums, pears, or oranges, fried meat, or fried or broiled bacon, roast pork, pork pies, hot roast or boiled beef, or hot veal, goose, duck, soups, cheese or brown bread; coffee too heating; homœopathic or prepared cocoa, bad; cocoa stewed from nibs, good; green tea, bad; also buttered toast and cakes, cabbage, greens, turnips, radishes, cucumbers, and salads; soda, or soda-water, lemonade, and ginger-beer, especially bad; and all tonics, physic, and aperients, ruinous. What we have found good is a breakfast cup of revalenta, before or on rising from bed. Breakfast: cocoa made from the nibs only, or weak black tea, with white bread and little butter, and an egg if it suits; sometimes isinglass in tea or cocoa; some can take cold boiled bacon with white bread, but not all. Some take, with great advantage, a little Scotch oatmeal porridge to breakfast, with a little milk and crushed refined sugar before tea or cocoa; one especial point must be observed, that the porridge should be thoroughly cooked, as, if not quite soft, it is very indigestible. Porridge should be boiled at least an hour; or, if the meal is put in a little warm water, and allowed to stand on an oven all night, it will be cooked with ten minutes' boiling next morning. I wish again to warn persons with weak or disordered stomachs against giving the weak organ too much to do; a weak stomach must not be oppressed with food; and it is often surprising to our patients what a small quantity of food will not only sustain life, but cure. This, however, must be obvious to any thinking person: we do not work a weak or injured limb, but give it rest; the digestive organs, however, must work, whatever their condition is, or death ensues; but they should be treated as weak organs. Forenoon: cup of revalenta, a little white bread with a scrap of butter, and little cold water; especially avoid all kinds of biscuit, they are indigestible; also sponge-cake; and, of course, all lozenges. Dinner: cold mutton sandwich, no mustard; the mutton passed through the sausage machine or chopped fine makes it easier of digestion. Raw beef or mutton passed through sausage machine, then cooked before fire, or in oven, in form of sausage, without pepper, often suits, with bread and a little cold water to drink. Avoid drinking even half a tumbler of cold water at once; it will chill the stomach, lower its vitality, and cause immediate acidity. Cold water, by sips, very good in most cases; if it does not suit, have it very nearly cold. Arrowroot pudding good; maccaroni, rice, in some cases, without egg; sago, without egg; corn flour, mould; stewed pears or apples, worth trial; but some cases take only the sausage, as above, and water, and nothing more for dinner. Strawberries, gooseberries, raspberries, currants, oranges, all objectionable—either raw, or stewed, or preserved. Tea time as breakfast; and cup of revalenta, or sago, to supper; and in bed, keep over stomach warm, either by pillow or dry flannel, a spongio body bandage; rubbing the stomach with dry hand or water very good at morning, noon, and night. Mustard plasters may be used with advantage often; also use 77, and 235 dry in day, 234 in night. A good deal of action of the arms and body while sitting in a chair useful; moderate walking exercise, and out of doors, necessary for recovery; many persons have naturally weak stomachs, and such cannot be always without feeling this; they should, however, be content to get through life without trying to have the stomach powers of robust persons, and if they avoid physic or stimulants and the before-mentioned improper diet, they often live longer than robust persons, who are tempted by their powers of digestion to take

more than nature requires; hence the common cases of apoplexy, dropsy, and various other diseases which terminate the existence of persons long before their natural term of life. Insufficient clothing is a very common cause of stomach disorder; the surface of the body should be kept warm, if proper circulation is to go on, and the healthy action of the pores of the skin. Fine broadcloth coats and trousers and open waistcoats I often see mischief from.

PREPARATION OF PEPSIN. (From the *Popular Science Review.*)—This substance is now so much used in medicine that any improved mode of preparing it is of importance. Herr E. Scheffer thinks he has hit on some improvements in the following mode :—The mucous membrane of a previously well-cleaned hog's stomach is dissected off, chopped finely, and macerated in water acidulated with hydrochloric acid for several days, during which time the mass is frequently well stirred ; the resulting fluid is strained, and, if not clear, set aside for twenty-four hours, in order to allow the mucus to settle. To the clarified liquid a thoroughly saturated solution of chloride of sodium is added, and the whole thoroughly mixed. The pepsin, separated from the rest of the solution by the addition of the saline solution, is found floating on the surface of the fluid, and is removed with a spoon, put upon cotton cloth to drain, and finally submitted to strong pressure, to free it as much as possible from the salt solution. (*If human beings had the animal heat in the stomach which pigs have, they might digest swill, but the disgusting idea of taking distilled pigs' or calves' stomach for digestion is as disgusting as it is absurd.*)

A healthy state of the digestive organs is impossible with the use of tobacco, which also entails certain suffering, and frequently paralysis or disease of the brain. Young men who use tobacco are not aware what a store of lifelong suffering and inability to enjoy life they are laying up when the body is least able to bear it. I have great numbers of wrecks from this cause, whose useless regrets and remorse it has often pained me to hear.

A Note on the Effects of Tobacco.—*From the* Lancet *of October*, 1857.—"When I first occupied my present lodgings, I was struck with the almost constant appearance of a young man, obviously of fortune or independence, who walked up and down on the opposite side of the road, half-way between my window and the sea. He was tall, robustly made, but stooped, and his whole gait and appearance were slow, slouching, and inanimate. I could not imagine what should induce a fine young man so to occupy himself, or rather to pass hour after hour sauntering up and down without occupation. At length the mystery was solved. I observed, what I had not discovered at first, that the youth *had* an occupation ; between his hand and his lips he constantly held a *pipe*. He thus, therefore, spent his time dreamily away, without energy, without object, in a state of constant half narcotism. I have known members of my own profession so to devote themselves to this narcotic, as utterly to lose the energies requisite for activity in study and practice, and consequently for success ;—a room, a dress, devoted to the purpose of smoking, hours spent in the indulgence of the solitary vice ; half narcotism, half anæsthesia. I would not boast, but I think I may affirm without boasting, that I have *laboured* in the cause of medical science, during two-fifths of a century, more than any one. This journal bears testimony to these labours, and with whatever success they may have been crowned, I am firmly convinced that I never should have accomplished them had I been a smoker—had I absented myself from society, and shut myself up in a peculiar room, and in a peculiar dress, the impersonation of *self*, solitude, and oblivion. I write this for the warning of my younger professional brethren. It is plain, tobacco acts on the cerebrum, the medulla oblongata, and the heart ; its effects are stupidity, defective breathing, defective action of the heart—forms of debility and impaired energy. These phenomena are primarily physical and physiological ; no doubt the blood is poisoned, and in its turn poisons the brain, the medulla, and the heart. Sometimes, in those who smoke for the first time, these symptoms occur in a form even of danger. Such a case occurred to me many years ago, and was published in

the *Edinburgh Medical and Surgical Journal*, in 1816. Of this case I propose to adduce a brief extract:—

"'Mr. J. H., aged nineteen, unaccustomed, except for a day or two before, to the effects of tobacco, smoked one and a part of a second pipe. He became affected by violent syncope, and by violent retching and vomiting. He returned home, complained of pain in the head, undressed himself, and went to bed. Soon afterwards he was taken with stupor and laborious breathing. He was found in that state by the medical attendant. The countenance was suffused with a deep livid colour; the eyes lost their brilliancy; the conjunctivæ were injected; the right pupil was exceedingly contracted; the left was much larger than usual, and had lost its circular form; both were unaffected on the approach of light. The hands were joined, and in a state of rigid contraction; the arms bound over the chest; and the whole body was affected with spasmodic contractions; the breathing was very stertorous.'

"From these several symptoms we may pretty accurately judge of what is going on in the brain in solitary smokers, and in a minor degree in all smokers. The robust may support the effects of tobacco; but the feeble will assuredly pay the penalty of languor, inertia, and incapacity. I have known more than one instance of members of our profession, both in its higher and lower ranks, making shipwreck of their success and fortune, by addiction to solitary and sedentary smoking."

Experience has fully convinced me that Total Abstinence from ale, wine, spirits, or any stimulating liquids or tobacco, is absolutely necessary in all cases if health is to be restored or preserved. I find by drinking water only I have enjoyed a freedom from headache and a buoyancy of spirits I never enjoyed whilst taking any stimulating beverage, and I also find my strength increased, and that I can take a greater variety of food without inconvenience. I strongly recommend a trial of the same plan to any one and every one.

FROM having had a large number of distressing and many hopeless cases of paralysis and brain affection, brought on by the use of tobacco, I give the following extracts from high authorities. Many have escaped these terrible maladies by taking my advice, to shun tobacco *in toto*.

THE PHYSIOLOGICAL POSITION OF TOBACCO.

By William E. A. Axon, M.R.S.L., F.R.S.

(*Extract from* Journal of Science, *October*, 1872.)

Is tobacco good for the health of man? Does it add to his strength, make him readier for work, more capable of endurance, add to his length of life and happiness?

The questions may for all practical purposes be confined to humanity, for, with one or two exceptions, the brutes avoid the tobacco plant, and we are not aware that any of them are in the habit of burning its leaves and inhaling the fumes in the manner adopted by man. We may conclude, then, that if tobacco has any uses, to man is due the credit of having discovered them.

In speaking of the physiological position of tobacco, we have to deal with the action of the essential principles of that plant upon the human system. The peculiar effects of tobacco are due to the action of the essential oil of tobacco in the case of chewing and snuffing, and to that combined with the empyreumatic oil in smoking. Nicotine, as this essential principle is called, is so deadly an alkaloid that the amount of it contained in one cigar, if extracted and administered in a pure state, would suffice to kill two men. According to the experiments of Vohl and Eulenberg, the nicotine is decomposed in the process of smoking into pyridine, picoline, and other poisonous alkaloids, which can also be obtained in varying quantities by the destructive distillation of other vegetable substances.

Nicotine, as for convenience we may continue to call the poisonous principles of tobacco, can enter the body through various channels—by the stomach, by the lungs, by subcutaneous injection, and by the skin itself. But in whatever manner it enters the human system, its effects are in the main uniform.

The most noticeable symptom following smoking is the undue acceleration of the labouring forces of the heart. Under the stimulus of tobacco the heart beats more quickly, as is evidenced by the rising pulse. We have not the mass of detailed evidence as to this fact which exists in relation to alcohol, but the experiments made by Dr. Edward Smith, and related to the British Association in 1864, are full of interest. "The experiments were made at ten p.m., when the rate of pulsation naturally declines (as he had proved by hourly experiments published in his work on the "Cyclical Changes of the Human System"), and at least four hours after any fluid or solid food had been taken. They were made in a sitting posture, after it had been maintained fifteen minutes, and with the most absolute quietude of body and mind; and thus all influences were eliminated but those due to the tobacco. The rate of the pulsation was taken every minute for a period beginning two or three minutes before the smoking began, and continuing during twenty minutes or until the pipe was exhausted.

The following are the chief results obtained:—

Experiment 1.—Pulsation before smoking was 74½ per minute. Smoking 6 minutes—79, 77, 80, 78, 78, 77 per minute = 78·1 average. Smoking 7 minutes—83, 87, 88, 94, 98, 102, 102 per minute = 93·4 average. Smoking 8 minutes—105, 105, 104, 105, 105, 107, 107, 110 per minute = 106 average. After smoking 11 minutes—112, 108, 107, 101, 101, 100, 100, 100, 100, 98, and 91. There was thus a maximum increase of 37½ pulsations per minute.

The heart, then, during the act of smoking, was doing extra work; in some of the experiments this additional labour amounting to more than 50 per cent.

The effect upon the heart is not caused by direct action upon that organ, but by paralysing the minute vessels which form the batteries of the nervous system. Thus paralysed, they can no longer offer effectual resistance, and the heart, freed from their control, increases the rapidity of its strokes, expanding the vessels, with an apparent accession, but real waste, of force.

Its effect in lowering the animal temperature is very striking. When the walls of the blood-vessels are distended with that fluid, the increase in volume decreases the rapidity of the circulation and augments the local warmth. When the walls partially collapse, the circulation becomes quicker, but the heat diminishes. The heat, in fact, is transformed into motion.

To determine the influence of tobacco upon the secretions, M. Blatin made some experiments upon a dog, to which small doses of nicotine were daily administered. An increased dryness of the mucous system and a large secretion of urine were the first result. A wound made on its leg had not cicatrised in eight days, in spite of the well-known rapidity with which wounds usually heal in dogs. The mouth became dry, the throat inflamed, the animal, although constantly drinking, was unable to quench its thirst. Some drops of water placed upon the wound moistened it only a few moments. As the pressure of the blood is increased by this poison, in small doses it is a diuretic. From all these experiments we may conclude that nicotine acts both on the heart and vessels, and is a vasculo-cardiac poison. There is a theory not unknown, even amongst medical men, that the toxic influences of tobacco are only transitory, and that all the poison is ultimately expelled from the system. But it is certain, from an experiment of M. Morin, that the nicotine can be detected in the tissues of the lungs and liver after death. So little is the theory true which would have us believe that the tobacco poison is immediately excreted, that the very cannibals turn up their noses at the nicotised flesh of smokers!

The rough voice of snuff-takers, and the "smoker's sore throat," are also due to the influence of tobacco. Some smokers occasionally spit blood, often immediately after going to bed, and this affection may be confounded with true hæmoptysis. M. Blatin regards all these local affections as trifling, when compared with the gradual saturation of the system with nicotine, which, accumulating in the tissues, waits for the opportunity, varying, according to individual habits and constitution, of declaring its poisonous nature.

From intermittent pulse to angina pectoris the distance is not far. That tobacco

may produce all the usual symptoms of that painful disease has been abundantly shown by Beau. To the cases which he has cited may be added an epidemic of this nature noted by M. Gelineau, with which a great part of the crew of the *Embuscade* were struck. The patients were all great smokers. It is worthy of notice that this disease is much more common amongst men than women. The fact that tobacco reduces the animal temperature is an important one. It shows the fallacy of those who smoke to keep the cold out, and proves conclusively that tobacco is neither a generator nor conserver of vital heat, but, on the contrary, a wasteful destroyer of it.

The influence of tobacco in liberating the heart from those restraints which regulate its healthy action, naturally leads to the conclusion that in frequent doses that organ must, sooner or later, undergo a structural transformation. Although when thus excited it has less pressure to overcome than when in a normal condition, yet the extra exertion cannot but be evil in its results, since it causes an irregularity in the supply of blood, and thus degrades tissue. Tobacco belongs to the class of narcotic and exciting substances, and has no food value. Stimulation means abstracted, not added, force. It involves the narcotic *paralysis* of a portion of the functions, the activity of which is essential to healthy life.

It will be said that tobacco soothes and cheers the weary toiler and solaces the over-worked brain. Such may be its momentary effects, but the sequel cannot be ignored. All such expedients are fallacious. When a certain amount of brain-work or hand-work has been performed, Nature must have space in which to recuperate, and all devices for escaping from this necessity will fail. It is bad policy to set the house on fire to warm our hands by the blaze. Let it, then, be clearly understood that the temporary excitement produced by tobacco is gained by the destruction of vital force, and that it contains absolutely nothing which can be of use to the tissues of the body.

Tobacco adds no potential strength to the human frame. It may spur a weary brain or feeble arm to undue exertion for a short time, but its work is destructive not constructive. It cannot add one molecule to the plasm out of which our bodies are daily built up. On the contrary, it exerts upon it a most deleterious influence. It does not supply, but diminishes, vital force.

It has been denied that tobacco leads to organic disease, but the evidence is very strong the other way, and it would be very remarkable if continued functional derangement did not ultimately lead to chronic derangement of the organs : that it causes functional disturbance no one dreams of denying ; indeed it has been remarked that no habitual smoker can be truly said to have a day's perfect health. It is scarcely requisite that we should add that tobacco is in no sense a necessary of life.

Think of ancient Greece, of her glory in arts and arms and song, of her poets, sculptors, architects, after whom the moderns toil in vain. We do but follow in their tracks with halting steps and slow, and yet they lived their lives, and thought their deathless thoughts, and gave immortal beauty to the silent stone, without tobacco.

What shall we say, then, to this habit ? It is in no case necessary or beneficial ; it is a social nuisance ; it is devoid of all æsthetic beauty ; it is an unmanly leaning on a solace to care and labour neither sought nor needed by the weaker sex ; it is an enormous and yearly increasing source of national improvidence. Above all, it is the foe to youthful development, the bane of youthful blood and brain. The subject may seem to some too trivial for serious attention ; but when we consider the extent of juvenile smoking, we see that the national life and stamina are seriously threatened by this ignoble habit. So a noble tree, heaven-aspiring, with wide-spreading branches, whose leaves are a refuge for the singers of God, may be attacked by some insignificant parasitical plant, which winds round and round it in serpent-folds, and sucks away its sap and vigour, till the green leaves are blasted and the singers flee away, till the glory is departed, and death and ruin alone remain.

INJURIOUS EFFECTS OF SMOKING.—S. Solly, Esq., F.R.S., the eminent surgeon of St. Thomas's Hospital, Borough, has lately delivered a very important

Lecture on Paralysis, before the Students of that excellent institution, in which smoking is pointed out as one of the various and insidious causes of general paralysis. After condemning the immoderate use of malt liquors or spirits, which only stimulate for a time, and afterwards produce the most enervating and pernicious effects, the lecturer proceeded: "There is another habit also, which I cannot but regard as a curse of the present age—I mean smoking. Now, don't be frightened, my young friends; I am not going to give a sermon against smoking, that is not my business; but it is my business to point out to you all the various and insidious causes of general paralysis, and smoking is one of them. I know of no *single* vice which does so much harm as smoking. It is a snare and a delusion. It soothes the excited nervous system at the time, to render it more irritable and feeble ultimately. It is like opium in that respect, and if you want to know all the wretchedness that this drug can produce, you should read the 'Confessions of an Opium-Eater.' I can always distinguish by his complexion a man who smokes much, and the appearance which the fauces present is an unerring guide to the habits of such a man. I believe that cases of general paralysis are more frequent in England than they used to be, and I suspect that smoking tobacco is one of the causes of that increase."

Nicotin in Tobacco Smoke.—In a recent number of the *Centralblatt* Dr. Emil Heubel, of Kiew, a somewhat noted university in Russian Poland, gives a pretty full account of researches which he had carried on with regard to the presence of nicotin in tobacco smoke, summing up his conclusions thus:—1. Nicotin is without doubt contained in tobacco smoke, and its presence can be proved as well by chemical analysis as by physiological experiment. 2. During slow combustion the nicotin is to be constantly found in the smoke, a quantity of the alkaloid, varying as the tobacco is or is not rich in nicotin, passing over in the smoke. 3. This nicotin exists in tobacco smoke, for the most part, at all events, as a salt of the alkaloid. 4. The fact that nicotin, spite of its considerable volatility and easy solubility, is, during the process of smoking, by no means entirely, or even for the most part, dissipated or dissolved, appears to have its solution in the circumstance that in tobacco smoke, as well as in tobacco leaves, the nicotin exists, not as a free alkaloid, but as a stable salt of nicotin. 5. In the working of tobacco smoke both upon the human and brute organisms an essential share in the effect is taken by the nicotin ingredient of the smoke. In the course of his preliminary remarks, Dr. Heubel records a striking experiment thus:—"That a relatively large quantity of nicotin passes over in tobacco smoke seems to be supported by the following observation which I once made—*that the smoke, only partially collected and condensed, derived from the combustion of but a single cigar, and from which, after condensation, only from six to eight drops of distillate were derived, was amply sufficient to produce in a large frog the most violent nicotin convulsions, general paralysis, and death.*"

"Your kind letter of the 24th inst. I duly received. Many, many thanks for your kind present of the volume. I received it on Thursday (noon post); left it on our dining-room table. The same evening I had an engagement at a church service; when I returned, I found my elder brother engaged in smashing pipes and burning tobacco, and making resolutions for future self-government, in a most excited state. I said, 'What is up?' He replied, 'I have been reading this book,' holding the volume you sent me aloft in his hand, and ejaculating, 'If I live, I will see the author.' I name this, my dear sir, as an instance of 'truth prevailing.' I should be glad to have your 'photo,' but the poem 'Spinning' is sufficient. The image of yourself is so beautifully represented in it, that I can now wait patiently your convenience in sending a photo on paper. Truly you must be photographed on the hearts of thousands. I pray God that the 'thread of your web' may not be cut for many a long year to come. Adieu, and God bless you.—Yours very respectfully, "J. H."

Scientific Poisoners.

It is astonishing educated men cannot see the absurdity of the following defence of the treatment which killed the young lady. Dr. Fox states that a dose of a few grains of blue pill has been followed by salivation, and destruction of the jawbone! Poor, deluded, suffering humanity, how long will you be made the subjects of horrible experiments, when the professors of the medical art proclaim in print the terrible effect of their destructive arsenal of engines for torture and death, and that it is impossible for them to know whether the dose will not destroy the patient, or produce frightful mutilation, almost worse than being killed outright?

To the Editor of the TIMES.

SIR,—You reported a few days since a sad case of death following the application by Dr. Meeres of a solution of bichloride of mercury for the cure of ringworm. The *Lancet* remarks as follows:—

"That a child of nine years old should become salivated by the application of even a strong solution of bichloride of mercury to the scalp in ringworm is in the experience of those most acquainted with the treatment of skin affections an unprecedented occurrence, and one which is only to be accounted for by an unfortunate idiosyncrasy in the patient. Dr. Tilbury Fox, from whose work the formula in question was taken, has used the application most extensively, and has seen no reason to regret the employment of it, during many years. The quantity of mercury required to produce salivation in different individuals is well known to vary considerably—a grain or two of calomel exciting profuse salivation in some persons. On this subject Dr. Nevins, a well-known authority on *materia medica*, writes:—

"'This extreme susceptibility, though far from common, is not very rare, but it can never be anticipated before trial in any particular instance. Children are not so readily salivated as adults; indeed, salivation is rarely produced.'

"What shall we say, then, of the most unjust censure heaped upon poor Dr. Meeres's innocent head by the coroner's jury? It is much to be regretted that the coroner—himself a medical man—did not either refuse to receive such a verdict or enter some protest against it. It may be presumed that sympathy with the parents of the child strongly influenced the jury, and that the verdict reflected excited feeling rather than dispassionate judgment. Dr. Meeres could not possibly have foreseen the lamentable result that followed. The object of using the mercury was the destruction of the parasite; and for this purpose a weak solution would have been inefficient. The solution is only intended to be applied in very small quantities to a non-abraded surface, and, physiologically speaking, its absorption to any appreciable, not to say injurious, extent was not to be anticipated. Granted that the result has taught a different lesson, and that Dr. Meeres has to undergo the sorrow that every right-minded man must feel under the circumstances, that is no reason why he, as a medical man, should be made the victim of an unjust verdict for discharging his duty to the best of his ability. The administration of a few grains of blue-pill has been followed before now by salivation and destruction of some part of the jaw-bone; but if the surgeon who administers blue-pill is to be censured and punished for such an untoward result, our profession will be a dangerous one to follow. At the same time, while condoling with Dr. Meeres, we strongly urge upon him to 'live down' the scandal, and to pursue unmoved the practice of his profession, certain of the support of all right-thinking people."

I need hardly say I feel, of course, the deepest sympathy for the parents of the poor little child under the distressing circumstance of this sad case, the untoward result of which I do not think any one could have foreseen.

I am, Sir, your faithful servant,

TILBURY FOX, M.D., F.R.C.P.

Sackville Street, W., September 15, 1871.

(As to Bromide of Potassium, which I have known to bring on impotence and softening of the brain; yet, mankind still go on swallowing it to their destruction if prescribed by an M.D. or surgeon. Thank God, I have been instrumental in saving great numbers from this fate by my warnings.)

"When the quantity taken daily reaches 4 grammes, the reflex sensibility of the fauces, epiglottis, and root of the tongue, and the sensibility of the generative organs are diminished. Acne (*skin disease*) then also appears; which is not, however, as has been represented, of critical importance. [The doctor thinks skin disease of no importance!] Dr. Legrand du Saulle commences with a gramme and a half or two grammes daily, and increases the dose gradually to six or nine grammes a day: in one case, in the course of twenty-six months, the increase was to 14½ grammes daily. In men no result may be observed till the daily dose reaches 4 or 5 grammes; in women 3 or 4½ grammes daily will sometimes produce distinct effects."

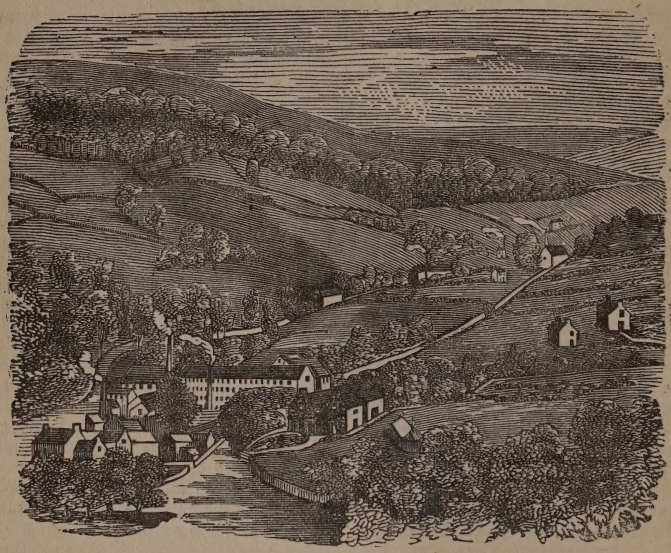
A case in point I met with this morning at the Institution. A fine, wiry frame, previously full of energy, now a shadow of his former self, and unable to remember the previous day's occurrences. The certain effect of bromide of potassium, given him by one of the highest medical authorities in London (see Index for cases of epilepsy). What effect bromide produces! Its terrible effects are dreadful to witness (as I have so often done), and yet it is a standard medicine and given freely!

The following men of genius would have the advice and prescriptions of the first medical men of the day. How different, to a certainty, would have been their lot in life if they had studied and acted on natural principles and habits of life, and total abstinence from stimulants, tonics, opiates, bromide of potassium, &c. Stimulants to such men is like constantly flogging a race-horse; and as to opiates, which poor Cowper took, they brought on his suicidal ideas. Judge Willes has just committed suicide, from his high genius, overwork, stimulants, and medicine.

Our soothing plans would, without doubt, have saved all of them, as I have so often proved in such cases, and made life long and happy; and, thank God! our instrumentality is still in full operation, and going over the world.

From the Literary Miscellanea.

Genius a Malady.—Thinkers there are who contend that genius, like insanity, is a symptom of disease of the brain. It cannot be denied that a large number of the geniuses of the world have been either melancholic or very eccentric, and in some instances have been the victims of violent and repeated attacks of insanity. Dr. Johnson was hypochondriacal, and in various ways gave evidence of a morbid condition of the brain. At the early age of twenty he became a victim of melancholic delusions, and from that time forward was never happy. His violent impetuosity and unreasonable prejudices may thus be accounted for. Southey lived for years in perpetual dread of insanity, and when at last he kneeled in the furrow, worn out through mental anxiety and fatigue, he composed that most instructive and useful of his works, 'The Life of Cowper." That Rousseau was a lunatic will be admitted without question by those who have studied his life and his writings, however ardently they may admire his genius. Paschal was one of the most original thinkers of France, but no inmate of any asylum ever presented more indisputable proofs of mental disease than those which characterized his whole career. All his life he walked in darkness, knowing not at what he stumbled, in constant fear both of the present and the future. He was the victim of absurd delusions, was harassed by excessive nervousness, and was the slave of uncontrollable eccentricities. On examination, after death, his brain was found to be seriously diseased.



LEA MILLS, ONE MILE FROM CROMFORD STATION, DERBYSHIRE.

NATURE'S OWN MEANS OF STIMULATING THE FUNCTIONS OF ANIMAL LIFE.

We breathe in one minute, 18 pints of atmospheric air.
„ „ „ hour, 1,066⅔ „ or 2 hogsheads 20 gallons.
„ „ 24 hours, 25,607 „ 57 „ 1 „ 7 pints.

There passes through the lungs—
In one minute, 8 pints of blood, weighing 9 pounds.
„ „ hour 449 „ „ „ 540 „
„ 24 „ 10,784 „ „ „ 12,960 „

1 circuit of the blood is performed in ... ... 160 seconds.
3 circuits „ „ are „ ... ... 8 minutes.
540 „ „ „ „ „ ... ... 24 hours.

In other words, there comes in contact in the lungs—
In one minute, 8 pints of blood to 18 pints of air.
„ „ hour, about 1 hogshead of blood to 2 hogsheads 20 gallons of air.
„ 24 hours „ 24 „ „ 57 „ 1 „ 7 pints.
(*Dr. Southwood Smith.*)

We inhale 79 parts of nitrogen, and exhale 77 parts.
„ „ 21 „ oxygen „ 13 „
„ „ a fraction of carbonic acid „ 7 „
„ „ a fraction of vapour of water 3 „ (*Dr. Priestley.*)

In the mutual action that takes place between the air and blood in 24 hours—

The air loses...	15,757·9131 grains, or about	32¼	oz. of oxygen
Unites with carbon	13,109·1040 „ „	27½	„ „
The body absorbs	2,648·8091 „ „	5	„ 248 grains
Nitrogen absorbed	2,267·1041 „ „	4	„ 347 „
The blood loses (carbon) ...	4,915·9132 „ „	10	„ 115 „
Carbonic acid formed ...	18,025·0172 „ „	37½	„
„ „ inhaled ...	105·1302	¼	„
„ „ exhaled ...	18,130·1474	37¾	„

The weight of oxygen and nitrogen absorbed is just equal to the carbon consumed. *Menzies.*

One hundred inches of oxygen consumes 12½ grains of carbon out of 11½ hogsheads of oxygen inhaled.

We consume in one hour 1,905 cubic inches, or 9 gallons 7 pints of oxygen.
„ „ 24 hours 45,720 „ „ 3 hogsheads 9 gallons „

THE THEORY OF ANIMAL HEAT, BY DR. CRAWFORD.

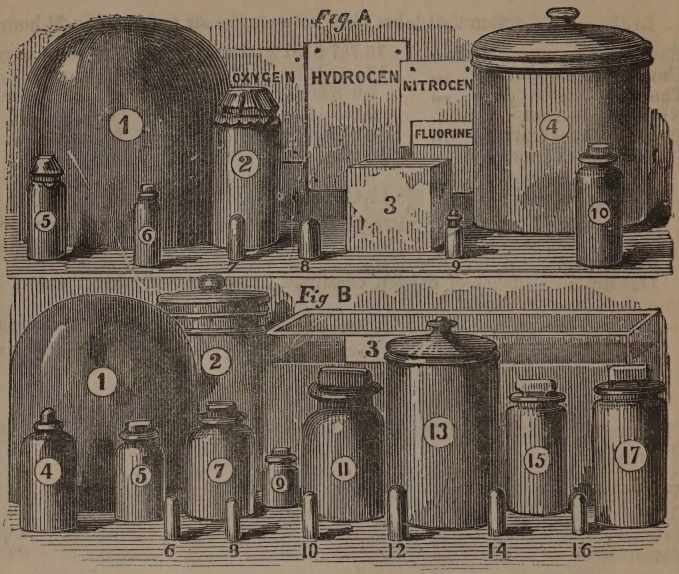
The specific capacity for latent caloric, taking water as the standard at ...	1·0000
Oxygen is	4·7490
Nitrogen is	0·7936
Atmospheric air	1·7900
Carbonic acid	1·6454
Arterial blood	1·0300
Venous blood	0·8928

The change of oxygen into carbonic acid in the lungs sets caloric free, and the change from venous to arterial blood at the same place absorbs the caloric set free, and retains it until the change from arterial to venous blood takes place in the capillaries, which are distributed through the whole body. We can assist or retard these processes, and enjoy or suffer in as just a proportion to our obedience or disregard of these causes, as an Infinite Creator has apportioned. Any person who neglects to keep the auxiliary respiratory muscles of the chest in a high state of contractibility by regular and judicious exercise, renders it a physical impossibility for the lungs to obtain a sufficient quantity of atmospheric air to duly arterialize the blood, so that it may transmit to the organs of animal life energy and force. *W. Monk.*

A person reclining on a couch breathes in one minute 500 inches of air.

Walking	1 mile per hour	... ...	800	„	„
„	2 miles „	... ...	1,000	„	„
„	3 „ „ ...	... ...	1,300	„	„
„	4 „ „ ...	... ...	1,500	„	„
Running	6 „ „ ...	... ...	1,800	„	„

Physical health, like moral rectitude, is a personal matter. Neither an hydropathist, nor any other pathist, can make a person healthy, vigorous, and strong, no more than a minister can make his congregation pious and holy. Either may advise, direct, and instruct, but it is a personal matter to read, mark, learn, and inwardly digest both physical and moral phenomena; the blessing must be earned before it can be enjoyed. And He is faithful who has ordained as well as promised; He whose attributes are as conspicuous in his providential and preserving care of our physical bodies, as are his attributes of love, mercy, truth, and justice in the scheme of human redemption. *W. Monk.*



COMPOSITION OF THE HUMAN BODY.—The cut, as above, is taken from a glass case in the South Kensington Museum, London.

Figure A.

Ultimate elements of a human being weighing 154 pounds.

	lbs.	oz.	grs.
1. Carbon	21	2	—
2. Phosphorus	1	12	190
3. Calcium	2	—	—
4. Chlorine	—	2	47
5. Sodium	—	2	116
6. Potassium	—	—	290
7. Silicon	—	—	2
8. Magnesium	—	—	12
9. Iron	—	—	100
10. Sulphur	—	2	219

Oxygen gas, the quantity in a body weighing 154lbs., is 111lbs., which would occupy 750 cubic feet of space. (p. 389.)

Hydrogen gas, the quantity in a body weighing 154lbs. is 14lbs., which would occupy about 3000 cubic feet of space.

Nitrogen gas, the quantity in a body of the above weight is 3½lbs., and would occupy about 20 cubic feet.

Fluorine, the quantity in a body of the above weight is 2ozs.

Figure B.

Proximate principles of a human being weighing 154 pounds.

	lbs.	oz.	grs.
1. Gelatine	15	—	—
2. Fat	12	—	—
3. Water	111	—	—
4. Sulphate of Soda	—	1	170
5. Carbonate of Soda	—	1	72
6. Chloride of Potassium	—	—	10
7. Chloride of Sodium (common salt)	—	3	374
8. Phosphate of Potash	—	—	100
9. Fluoride of Calcium	—	3	—
10. Peroxide of Iron	—	—	150
11. Fibrin	4	4	—
12. Phosphate of Magnesium	—	—	75
13. Albumen	4	3	—
14. Phosphate of Soda	—	—	400
15. Carbonate of Lime	1	—	—
16. Sulphate of Potash	—	—	400
17. Phosphate of Lime	5	13	—
18. Silica	—	—	3

My eye, accidentally, at the time of making the above ready for insertion, fell on the sale of Lady Anson's jewels, which produced £3,000, and is a striking commentary on the vanity of the poor soul when inhabiting the mass of carbon, phosphorus, fat, gelatine, &c., &c.

Weight.	Article of Diet.	Contain		Supplying to the Body		
		Solid Matter.	Water.	Flesh-forming Principle.	Heat-forming Principle.	Ashes.
		lbs.	lbs.	lbs.	lbs.	lbs.
100lbs.	Rice.....	92·4	7·6	8·4	82·0	2·0
,,	Oatmeal	91·9	9·0	12·0	77·0	2·0
,,	Maize Meal	90·0	10·0	11·0	77·0	2·0
,,	Sago	88·0	12·0	3·4	84·0	0·6
,,	Beans	86·0	14·0	31·0	51·5	3·4
,,	Wheat Meal	85·5	14·5	21·0	62·0	2·5
,,	Barley Meal	84·5	15·5	14·0	68.5	2·0
,,	Lentils	84·0	16·0	33 0	48·0	3·0
,,	Peas.....	84·0	16·0	29·0	51·5	3 5
,,	Bread (stale)	76·0	24·0	10·7	64·3	1·0
,,	Butchers' Meat ...	36·6	63·4	21·5	14·3	0·8
,,	Potatoes	28·0	72·0	2·0	25·0	1·0
,,	Carrots	13·0	87·0	2·0	10·0	1·0
,,	Red Beet-root ...	11·0	80·0	1·5	6·5	1·0
,,	Turnips	11·0	80·0	1·0	9·0	1·0

The above statistics, presenting the composition of various articles of food, are the results of the analyses made by distinguished chemists, principally of the Liebig school of chemistry, consisting of Dr. Lyon Playfair, Boussingault, and others, in which the composition of food is presented under the three great heads of requirements already mentioned, premising merely, that, in addition to matter to form the animal heat and the blood of the body, as well as ashes, a certain amount of innutritious matter accompanies most articles of food, and this has been declared by certain physiologists to be of considerable importance —bulk as well as nutrition being considered essential to the healthy action of food in the process of digestion.—*Copied from "Vegetarian Cookery;"* Pitman, Paternoster Row, London.

BARON LIEBIG'S EXTRACT OF MEAT AND THE WASTE OF FOOD.

(*Times, October* 1, 1872.)

We publish to-day a letter from Baron Liebig, in which he enters the lists in defence of the utility of the well-known extract of meat. . . . The present time, as one of unusual scarcity and dearness of some among the chief elements in the national dietary, furnishes a fitting season for calling attention to such waste, and for considering how far, and by what means, it might be remedied, as well as for considering the relative values, and the proper places in a rational alimentary scale, of some of the many kinds of food which we now fail to utilise to the fullest advantage.

The popular writings of Baron Liebig many years ago rendered most of us in some degree acquainted with the classification of substances used for food, and with the purpose they were severally supposed to fulfil. He taught broadly that food might be divided into three groups—the albuminous, of which flesh is the type; the oleaginous, or fatty; and the saccharine, which includes the innumerable forms of starch, which are capable of easy conversion into sugar. He taught that the oleaginous matter eaten was partly stored up in the economy as deposited fat, and partly "burnt off" as fuel for the production of animal heat. The saccharine matter was entirely burnt off in the same way; and only the albuminous was capable of being converted into the solid tissues of the body, and of replacing a daily waste of those tissues which was assumed to be considerable. The albuminous group of substances were found not only in animal food, but were largely represented in the vegetable kingdom, especially by the "gluten" of wheat, and by substances in which the pea and bean family were especially rich. Had it not been for this, life, Baron Liebig taught, could not have been maintained on vegetable food alone; and, as it was, vegetables presented the necessary albuminous nutriment in forms more complex, and less easy of application to the repair of the body, than in the forms furnished by the flesh of animals. Hence, the animal kingdom was held to fulfil the

office of digesting vegetable albumen, and, by converting it into flesh, of increasing its fitness to become the food of man. Under the influence of these views it was assumed that a large proportion of animal food was, if not necessary, at least desirable for the supply of waste; and that farinaceous and oily matters were of little value except to maintain temperature, and to confer upon the whole quantity of meal a bulk favourable to the digestive process. The progress of inquiry during late years has led, however, to considerable divergence from these doctrines. It is still held that only the albuminous material can be applied to the renovation of the body; but it is known that the destruction of the body is far less in amount than was supposed, and that a great proportion of the albuminous food taken by habitual flesh-eaters is at least simply wasted, and is often distinctly injurious. The fatty substances consumed are not merely "deposited," but furnish an absolutely essential ingredient to nearly every one of the tissues, but especially to the brain, the nerves, and the muscles. The saccharine group is not subservient only, or mainly, to the production of heat, but generally to the production of force; and the vital actions of man, instead of being maintained at the expense of his solid structures, are maintained chiefly at the expense of the force yielded by the decomposition of the starchy and saccharine matters which he consumes. It follows that these two groups are now held to hold the first place in nutritive value, and that the albuminous food, although necessary in moderate quantity, is superfluous when that moderate quantity is exceeded. The conclusions which result from scientific inquiry are thus brought into perfect harmony with the teachings of experience. A diet of suitable vegetable substances, with a sufficiency of fat, will everywhere preserve life in a high degree of vigour; the vegetable food affording by its gluten a sufficiency of material for tissue repair, and the fat being always essential. It is the staple of food, not only in the polar regions, where a [quantity which would elsewhere be superfluous is required to counteract the low external temperatures, but, with the addition of rice, forms the subsistence of multitudes who live under a tropical sun. An exclusively animal diet, on the other hand, is only possible for men whose restless activity is comparable to that of the animal carnivora, and, as was proved by a cruel experiment once tried at Gobelins upon some criminals, would, under ordinary circumstances, prove fatal in the course of a few days.

If we apply these considerations to the ordinary dietary of English families, it will be seen that our common practice is to waste animal food by consuming far too much of it, and to waste vegetable food by not availing ourselves of its inexhaustible abundance and infinite variety. We get our supplies of saccharine and starchy substances chiefly from bread, potatoes, and sugar; and we eat pulse and other vegetables more as a luxury, or a relish, than as a possible mainstay of existence. Rice is scarcely employed for any purpose but children's puddings; and yet, with the addition of some form of animal fat, and occasionally rendered savoury by a morsel of curry, it constitutes the chief sustenance of millions of people. Our Continental neighbours and our Hindoo fellow-subjects might each give us a useful lesson in the simple art of economising our meat supplies, by making them go farther than we do; and in the art also, less simple, though even more important, of using all the available forms of vegetable food for their proper and legitimate purposes. But another source of waste equally to be regretted is to be found in the absence of any trade organisation for bringing temporary abundance of some particular kind to the doors of those who might consume it. Heads of families who visit Billingsgate in the early morning often tell their wondering friends that on such-and-such a day fish was fabulously cheap, and recount their purchases to envious ears. But people generally cannot go to Billingsgate, and the ordinary fate of a glut of fish there is to perish and ultimately to be condemned by an inspector of markets as unfit for human food. The retail sellers of fish are supposed to be greatly averse to any occasional cheapening of the commodity in which they deal, and to consider it their interest to keep it as a luxury for the tables of the wealthy. Fish, however, is as rich in albuminous material as

flesh, and will fulfil all the purposes of flesh in the physical economy. The waste consequent upon a cheap day at Billingsgate, or which occurs when a great haul of some description of fish is used mainly for manure, is such as would startle those who wrote it down in pounds either of weight or value. The waste is little less serious which follows upon the want of any organisation for bringing the superfluous garden stuff of the country to the crowded populations of towns, or which is produced by the owners of gardens being themselves frequently ignorant of the nutritive value of the products those gardens yield. The remedy for these evils lies to a considerable extent in the hands of those who control the education of the country, and especially the education of the great mass of the people.

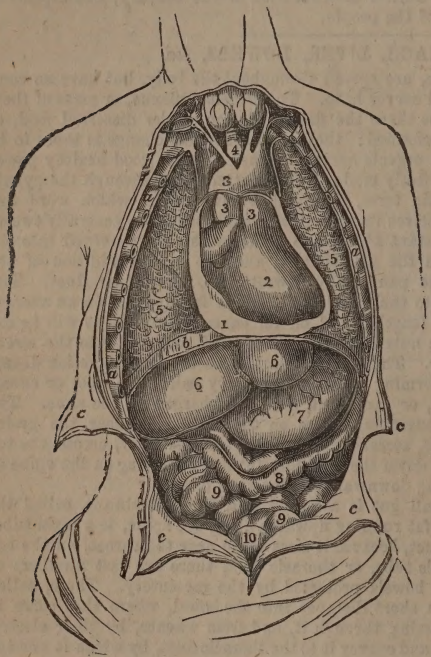
THE STOMACH, LIVER, BOWELS, &c.

THE organic, or nutritive nerves, are spread throughout the body, but have no common centre, as the cerebral spinal nerves have. The principal plexus, or mass of these nerves, is at the stomach, because there the first operation on the dissolved food, or chyme, as it is called, is to be performed: that is, the chemical change is there to be first communicated through the organic nerves. When there is good healthy power in these nerves, the change is perfectly made. The matter passes through the pyloric orifice into the duodenum, a Latin term, signifying twelve; from which word this first bowel, or second stomach, derives its name, being supposed to be generally twelve inches long. Here another important addition is made by the bile conveyed into the duodenum by the gall-duct from the gall-bladder, and also by the addition of the pancreatic fluid brought from the pancreas, or sweetbread, by another duct. The alimentary matter then passes into the small duct, which is supposed on an average to be about twenty-eight feet in length; and on its passage through, as will be explained, the principal part of the nutriment is taken up and conveyed into the circulation for the support of the body. The insoluble part, with the fecal secretion drawn out of the blood into the colon, forming what is commonly called the stool or excrement, passes through this colon, or large gut, and is discharged at the anus. The colon, as will be seen by the engraving, rises on the right side, near the groin, where the celiac valve is situated, ascends upwards toward the liver, across the top of the bowels, and then descends down the left side, turning and lying on the spine in the lower part of the back, passing downwards to the anus or seat.

The twenty-eight feet of small gut is attached to a fatty membrane, called the mesentery. Under this mass of fat running upwards along the spine, is a main tube, or as it is termed, the thoracic duct, because it rises up to near the throat, on the left side. From the lower part of this tube, or thoracic duct, there are vast numbers of smaller ones which pass into the bowels protected by the mesentery. These, called lacteals, or absorbents, project a short distance into the bowel, where they come in contact with the digested food passing through it, and from whence, by their electric power, they absorb the juice out, and convey it to the thoracic duct, by which it ascends to the front of the left breast, near the top of the shoulder; and there it enters what is called the left subclavian artery. This subclavian artery contains exhausted blood brought round to be renewed. The contents of the thoracic duct are here mixed with this exhausted blood, which then passes downward into the right valve of the heart. This valve opens to receive it, and then, by its muscular power of contraction, forces it into the lungs, where the fluid, which is then of a dusky colour, comes in contact with the air, and imbibes oxygen, which changes it to scarlet, and thus enriched and renewed, it is now fit, as fresh material, for absorption into muscle, bone, &c. The renewed blood now passes into the left side of the heart, and from there it is pumped into the large tubes called arteries. Vast numbers of very minute vessels or tubes, called capillaries, proceed into the tissues from the arteries, and round the bones, and to every part of the frame; where, coming in contact, each part, by its vis vitæ, or electrical property, has the power to attract out of the blood the material fitted for its peculiar support and structure.

The absorbents before named take up from the bowels, into the thoracic duct out of the digested food, any juices, without choice or selection; these juices have then to be purified, principally by passing through the lungs, liver, kidneys, and a number of other glands, but if given too much to do the impurities remain in the blood, poison it, and bring on typhoid fever, inflammation and congestion of the brain or liver. Starvation, water to drink, and simple food is the only way to keep the liver into good order.

The blood enters the substance of the kidney by arteries, from which, as will be seen in the engraving, small sprig-like branches arise, terminating in a knot of veins called Malpighian tubes. A uriniferous tube covers this, and, by its electric power,



a. The cut edges of the ribs, forming the lateral boundaries of the cavity of the thorax. *b.* The diaphragm, forming the inferior boundary of the thorax, and the division between the thorax and the abdomen. *c.* The cut edges of the abdominal muscles, turned aside, exposing the general cavity of the abdomen. 1. The cut edge of the pericardium turned aside. 2. The heart. 3. The great vessels in immediate connection with the heart. 4. The trachea, or wind pipe. 5. The lungs. 6. The liver. 7. The stomach. 8. The large intestine. 9. The small intestines. 10. The urinary bladder in the male; the womb occupies the place in the female, and the bladder more to the right side.

draws out of the blood, through these knots of vein, the urine, together with phosphate, urea, and other matters not required for nutrition. When these knots of delicate structure become inflamed or diseased, by alcoholic drinks, or other bad matter in the blood, they allow the rich and nutritive parts of the blood to pass with the urine; and soon, as in diabetes, rapid waste of the body takes place.

The liver takes out of the blood by its electrical power, or vis vitæ, the proper material to manufacture into gall; which, when made, is deposited in the gall-bladder, situated between the lobes of the liver, and by the pressure exercised by those lobes upon the gall-bladder, the gall is forced into the duodenum, and is the natural stimulant or purgative acting upon the bowels. If the electrical power of the nutritive nerves is weakened by alcoholic drinks, and use of tobacco especially (a slow but sure poison), or by improper food, the bile or gall is not taken out of the blood; it continues to circulate through the body, carrying mischief wherever it comes in contact with these delicate nerves; and if relief is not given produces jaundice and what are termed bilious complaints. When the gall is of a bad quality, irritation

of the mucous membrane and nerves of the duodenum is caused, and instead of the bile passing as it ought to do into the bowels, it finds its way upward into the stomach, and is thrown off by vomiting, or passes downwards, irritating the bowels, and causing diarrhœa, and this is the way many have to pay for the pleasures of the pipe and indulgence at table.

The liver also acts as a nutritive organ, forming sugar out of the exhausted blood, and carrying it into the circulation; and also in forming the red corpuscles which must be present in healthy blood, which is of a light crimson colour. A large amount of impurity in the blood is thrown off by the lungs, which also absorb oxygen; this, coming into contact with the carbon in the blood, produces combustion of that substance, and so gets rid of impurity. When a person has fœtid breath, the blood is in a bad state, and this should always give the alarm to rectify the impurity by proper diet, attention to the skin, &c., before the disease increases, and typhus fever or inflammation result. (For Liver Complaints see index.)

On an average one hogshead of blood passes through the heart and lungs every hour, and calculation shows that entire circulation of the quantity contained in the body takes place in from one to two minutes. A power equal to four cwt. is exercised by the lungs in drawing in the air into the bronchial tubes and air cells, and of three cwt. in expelling the air out of the lungs. It is supposed the linings of the bronchial tubes and air cells around which the blood circulates to come in contact with the air in the tubes and cells, pass a surface or area exceeding thirty thousand square inches. Besides the liver, lungs, and kidneys, other organs act as purifiers to the body. The skin, with its three thousand pores to every square inch, throws off from an average-sized person one to two pounds of impure matter every twenty-four hours by insensible perspiration. There are, it is supposed, on an average, twenty-eight miles of these minute corkscrew-like ducts or conduits to let out the perspiration. Then there are as many pores called absorbents, to the minute capillaries, or small blood veins, to give them oxygen, and to cause combustion of innutritious matter. Hence the necessity of breathing pure air, and keeping the skin cleansed of dirt and excretions, which otherwise would be re-absorbed; and also the necessity of having under garments frequently washed, or they will become charged with this fœtid matter, and will restore it back to the system by the absorbents.

The extensive system of lymphatic veins and glands distributed throughout the body absorbs matter, purifies it, and returns the nutritive part into the system, and the rest into some of the channels which carry useless residue away. The glands perform a very important office, and act extensively as chemical laboratories in preparing nutritive matter for assimilation; beyond the fact that they have this power, little is known of their complicated and delicate structure. The wonderful organism of the human frame, taken in all its parts and workings, is altogether past comprehension. It would make this description too complicated to go into all the minute particulars of the structure and working of the various parts of the frame. I give further on many engravings and notes, which enter into these particulars.

Diet, Clothing, and Habits of Life.

Without a firm resolve to conform to the laws of nature in respect to diet, &c., no curative treatment will avail for health or comfort. Thousands, indeed by far the majority, both eat and drink what they are fully aware is not best for their healthy sustenance; and yet persist in such a course, merely to gratify their appetites; thereby bringing on themselves much suffering, and shortening their lives. Some act thus from a natural taste for such things, and others from a dislike of being thought peculiar in their habits of life. Such are generally complaining of being unwell, and truly they may; and are constantly applying to the doctor for advice and physic, who can do nothing for them but give temporary relief by pills and draughts. The temperate use of plain and wholesome food, cleanliness, and taking proper open-air exercise, with that proper denial in abstaining from intoxicating drink, smoking, and other pernicious habits, and a strict government of the passions, will bring a

certain profitable reward. I have not the slightest expectation of making all converts to simple living who read this book; but as my former pamphlet induced many to change their mode of living for the benefit of their health, I have no doubt this more extensive treatise, in which the hydropathic system is more fully explained, will have a similar effect in many cases. I have recently had two army officers in my establishment, who were restored to comparatively good health during a short stay. They owned the benefit they had received from our simple mode of living, and abstinence from stimulating drinks and tobacco; yet they declared it was impossible to avoid taking wine, spirits, &c., at the mess table, and at the dinner parties they were obliged to attend, thus sacrificing health to foolish custom. A recurrence to late dinners, and the usual quantity of wine they had been in the habit of taking, with cigars, will certainly bring a return of the ailments for which they came to my establishment for relief, and prevent them enjoying that good health and calm state of mind which a natural state of the stomach, and quiet nerves attendant thereon, so materially promote. I and my wife have signed the total abstinence pledge not to use any alcoholic liquors, or keep them in our house, except for medicinal purposes; and consequently are not pressed to break it by our friends. This plan is by far the best; it sets a good example, and is a security against returning to an injurious practice.

EXERCISE.—Long walks before breakfast are injurious, as the stomach thereby becomes exhausted, has not the power to digest the food taken at that meal, and acidity and headache are the consequences. A crust of bread, and a glass of water or milk, should be taken before going out. Exercising the limbs, lungs, and whole frame at proper intervals is indispensable to health. Unless the body be properly exercised, the replacement of worn-out tissue and morbid matter is slow, from want of due warmth in the blood. The stomach, duodenum, liver, and bowels, must have muscular exercise to have healthy action. By the full exercise of the lungs in good air, oxygen is freely brought in contact with the carbon, or useless matter in the blood, which is thereby consumed and carried off. Where persons cannot take long walks, they may do a great deal towards keeping themselves in health by exercising their limbs, filling their chest as full of air as possible, holding their breath, throwing out the chest, and, at the same time, working the arms; but numbers will be at no trouble of this kind, merely because they have no country walks near, or gardens to exercise in. Health, however, can only be enjoyed by unsparing effort, and will well repay any amount of trouble bestowed upon it, and self-denial practised for its sake. Ordinary gymnastics are too violent exercises, except for robust persons, and even they often suffer for life from them.

It is a great prejudice to suppose that we cannot begin too early our intellectual education. We do begin too early when we choose that period in which nature is still engaged in the development of bodily strength and organs, and where all her power is required for this purpose. If children are then compelled to sit quietly in a room, and their young minds urged to action, we take from them the noblest part of their strength, which is consumed in the function of thinking; growth is necessarily retarded, the limbs imperfectly developed, the muscles weakened, the digestion becomes bad, scrofula appears, and then ensues a predominance of the nervous system in the whole machine, which exhibits itself during lifetime in nervous diseases, hypochondriasis, &c. If the child is very early disposed to think and to learn, we should, instead of encouraging this tendency, as is usual, rather prevent its being indulged; for such precocity is in itself a disease, or at least an unnatural condition, which is to be avoided. Any unequal development of our faculties is injurious, and it is certain that mental exertions weaken the more as they are unaccompanied by bodily movement. It is also certain that he who between his mental occupations goes through suitable bodily exercises can work mentally much more, and with less injury to his health, than another who neglects his bodily powers.

ADVICE TO MINISTERS OF THE GOSPEL AND ALL PUBLIC

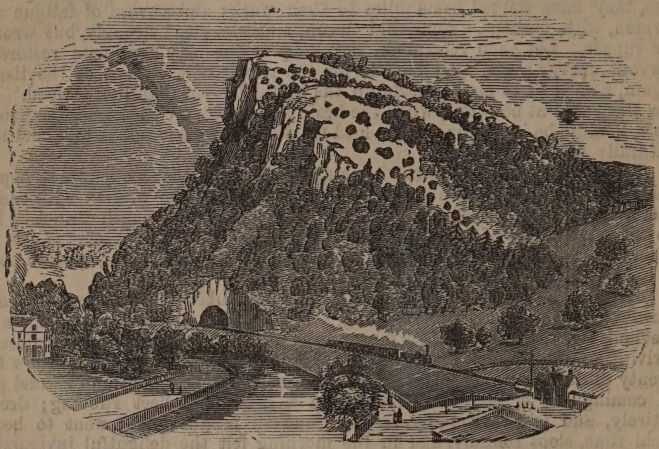
SPEAKERS.—Dr. Jonah Horner, in his excellent work on "Health: what Preserves, what Destroys, and what Restores it" (Ward & Co., Paternoster Row, price 1s. 6d.), in which there is also much important information in popular form, says:—"I know that many ministers of the glorious Gospel, who preach on week nights as well as on the Sabbath, make a great mistake by taking suppers after their labours in the pulpit. I know well that they are frequently urged to it by the kindness of friends with whom they have their abode. Frequently, also, they have walked some miles to their work; and a sense of fatigue after sermon, with, perhaps, a somewhat urgent appetite, plead strongly, but wrongly for supper. Let such remember, that *sleep* is the only legitimate restorer of nervous energy; and that food is for the supply of the waste of the tissues. Again, a demand is always made on the nerves for the digestion of food. You see, then, that at bed-time, when the brain and nerves are in the most exhausted state, it must be improper to take food for that purpose which is best and most naturally answered by sleep."

This will be found quite true in practice, although it is so opposite to popular opinion. Abstaining from animal food altogether, when pressed with mental exercise, will be found of great service. The idea that strength cannot be kept up without the use of animal food is shown to be fallacious by some of the first authorities on such subjects. The strongest, healthiest, and longest lived people in the world do not use animal food at all.

FATIGUE AND COLD AFTER TRAVELLING.—On returning from a journey on a very cold frosty evening, and having had but little sleep the night previous, and little opportunity for a comfortable meal the day or two before, on arriving at home I took tea at six o'clock, and at eight had a hot shallow bath twenty minutes, soaping over well with common yellow soap and flannel pad; on coming out of the hot shallow had a good dry sheet rubbing; dressed entirely, and felt thoroughly restored, and all fatigue gone; went to bed at usual time, slept soundly, and in the morning felt the delightful invigorating effects of the evening's bathing operations. Were this adopted after cold fatiguing journeys, many would be saved from illness and disease, as the system often suffers from lowering of the vitality of the frame, for days or weeks after. Bath No. 98 will do as well at bed-time.

BRACES AND GARTERS.—These appendages of dress are far more injurious than is generally known. Braces tend to cause the wearers to stoop, and so contract the chest. A pair of cloth straps, set on seven inches apart, and placed just on the top of the hips, will keep the trousers in a comfortable position far better than braces; and have a further advantage over braces in supporting the muscles of the hips and back, leaving the body free and more inclined to throw the trunk back. If the straps are placed higher than the point of the hip, they will feel tight and uncomfortable round the waist, or if placed more than seven inches apart; the straps should be two inches broad where they are set on, and brought to one and a quarter at the ends, with a one and a half wide buckle. The ordinary fashionable plan of having no waistbands to trowsers, and buttoning up the front, with the waistcoat only just to come to meet the trowsers, and the waistcoat only to button a short way up, is a very absurd mode of dress for this country, except during the warmth of summer. Such fashions leave the viscera unprotected in cold weather, and are the fruitful cause of chest, stomach, and liver complaints. Unless the vital warmth is kept up in the nutritive organs, it is impossible they can act properly; the neglect of such simple and obviously necessary precautions keeps thousands in a chronic state of ill health. On the vitality of the plexus of organic nerves in connection with the stomach depends the power of digestion. Dyspeptic persons will often feel a coldness there externally, even when warm in other parts of the body; and when this is the case it is utterly impossible good digestion can go on. Our No. 76 or 77 is here

useful to invalids; and great benefit will be felt by using No. 234 in bed. Trousers should be made what is commonly called with fall-down, which gives a good broad waistband; and they should never be made tight: I have mentioned this before. Disease often results from trousers made to fit tight in the fork. GARTERS prevent the return of the venous blood from the feet and legs; and are a cause of varicose veins in some, and always and inevitably injurious in all. A patient, to whom I was naming this lately, said he had had a hard tumour caused by the garter, which Sir B. Brodie had excised. Garters tend to cause cold feet.



HIGH TOR TUNNEL, MATLOCK.

INFLUENCE OF EARLY HABITS AND EDUCATION.

THE development and the influence of the nervous system in infancy and youth is of deep importance in the formation of character; but is a subject too abstruse and extensive to be more than alluded to in this little work. It will be seen by my previous remarks, that through the nerves all sensations, motions, and perceptions are conveyed to and from the soul or sentient part of our being; and it is only through the operations of these nerves or telegraph wires that we see the works of creation around us, that we hold converse with our fellow-creatures, that we act in the business of life, and become sensible of all impressions. Now we know that as by proper exercise in bodily labour the muscles and limbs are more fully developed, so it is the case with the nerves by proper training in early life. The ruin of many might be traced, if the truth could be ascertained, to their early training. Even in early infancy the methods used by some nurses, and foolish persons, to awe, soothe, or quiet infants,* leads to the unequal development of certain nerves, and which pernicious practices will afterwards become a source of misery to the religiously educated, and of final destruction and ruin to others not brought up with good example, and taught to keep their animal propensities in subjection to their reason and convictions. Many earnest Christians have to bear a thorn in the flesh from causes little thought of; and which, if their parents had possessed the knowledge, might have been avoided: the foundation of bad passions, addiction to strong drinks, and other more insinuating sensual desires, have been laid in the mind during childhood, through

* I do not allude to any drugs, but to actions.

particular nerves formed for righteous purposes, but when unduly and untimely developed by the folly of others were turned into a curse. Whitehead, "On Hereditary Diseases," and M'Dougall, "On Spermatorrhœa," give sad pictures of human suffering and misery, which might have been prevented by enlightened Christian discipline in parents and their offspring, had they known the true cause. Again, overworking the brain of young children, by the influence the nerves of sensation exercise over those of nutrition, stops the healthy development of the muscles, bones, &c., rendering such persons, when they come to act on the world's stage, utterly unfit for their duties. The soul has in consequence (as before observed) a poor, weak, disordered machine by which to perform its great duties; and we see such of weak constitutions, and wanting judgment and decision, easily carried away by animal impulse. How rarely do we see the children of our successful statesmen, merchants, and manufacturers, equal their parents in vigour? and this from the ambition of the parents in desiring them to excel in their education? On the contrary, how often we see or read of young men from the country making large fortunes, and distinguishing themselves by great powers of action, from their nervous system being fully developed, and their being mentally and physically uninjured by brain-work in their youth, so that when they come on the arena of action, they find in their well-developed frame a machine fully equal to perform the great work of life with ease, and bear its vicissitudes with composure. Seldom, however, is this constitution inherited by their descendants, for parents, overrating the value of a scientific or accomplished education, begin early to give their children a training in what they consider themselves to have been deficient. By this course they lay the foundation of nervous dyspepsia, with its long catalogue of miseries, to be handed down to posterity, increasing the evil from one generation to another, till the faculties of the offspring being thoroughly degenerated, hereditary insanity or imbecility is often the consequence. Children of the middle and higher classes are early allowed to use flesh meat and strong stimulants, which often induce inflammation and fever, carrying off thousands of such children, certainly not to the loss of society at large; such diet tends to flame the animal passions, and produces anything but amiability of disposition. Children should never have flesh meat or stimulants, if they are to have calm minds in sound healthy bodies. (See Index, Neurotic Diseases and Temperaments.)

"The benevolence so evident in your hydropathic labours induces me to ask for your opinion, so far as you can judge by the following statements, as to whether a young married man here would be benefited by the treatment, if he had the means of availing himself of it. His age is thirty-five, very temperate, tall, and was very stout until about fourteen weeks since, when he caught a violent cold. A severe pain seized him under the right shoulder and shoulder-blade; he had to take to his bed, and during the first fortnight he sank rapidly. A surgeon blistered him, and administered medicines too strong for him. His wife, dissatisfied with the treatment and its results, obtained the services of another surgeon, who declared that the other surgeon had been treating him quite wrong. I should have added above that after the pain seized him spitting of matter set in, and the first surgeon told him it was consumption. The present surgeon has sounded him, and told him that he has one or two abscesses behind his right lung, and that he must live principally on milk, and in the morning take an egg in milk, with a little rum. His cough is quite hard, but he states it gives him no pain. He has rallied considerably under the present treatment—so much so as to be able to dress and be down-stairs; still he is very weak. Having been a teetotaler thirty-six years, I have tried to dissuade him from the use of the rum, and have lent him a copy of your work on Hydropathy that a friend has presented to me; and I should rejoice if, by the Divine blessing, he could obtain relief by Hydropathy."

MISCHIEF OF EARLY EDUCATION. COMMON AND HOPELESS CASES OF CURE BY ANY DRUG REMEDIES, and only partial restoration by any others.—A lady, age about thirty, had been highly educated when very young, taught several languages, began to learn Latin at four years old, and, as a natural and certain consequence of such a training, the nervous fluid or vitality was drawn from its proper office of developing the bodily frame, and made her one of the very numerous class of invalids who can only get on in life with the help of warm rooms and carriages and nursing; unfit for any active exercise, or the active duties of every-day life; with her name constantly on the doctor's ledger, she was one of that numerous class who keep up the physician's status in society, and enable him to drive his brougham and give good dinners. When will parents study the natural and necessary conditions of healthy development? At present the practice of enfeebling and ruining the constitution in early life is in full force. I often argue the subject with parents, but rarely to any good result: they are so afraid of their children not being as clever as others, that they most effectually defeat their very reasonable desires by starving the body, depriving it of its due share of nervous vitality, to supply the brain for these accomplishments, which, when acquired, the body has often not vigour to use. "I give my children so very little schooling," says one mother, "they could not have less and not be very ignorant; I only permit them to be under their governess so long during the day, which is surely very little." I, in reply, point to the difference betwixt their sensitive, delicately formed children and those of the labouring population; and the difference, not only in the bodily conformation, but in the unnatural gravity and air of older people in their children, which polite society so much admire: the "quiet manners," no "vulgar boisterous ebullitions." But what does this prove? Why, that in these cases the brain has been drilled into what is not natural; it is already burdened with thought. The labourer's child is natural, light, joyous, when fed and clothed; and even when they see around them misery and privation, it does not depress them: they are not taught to look on the vicissitudes of life with concern; that will come time enough, and when nature has given them a frame to bear their trials. Not so with those in better circumstances; with them, all is artificial. Girls and boys, highly trained, have the manners, the ambition, the cares, the fears, and the hopes of adults; and, if they live to adult age, have a double share, and an early injured frame to carry them; so life is often miserable and a burden, and the seeds of sorrow and anxiety handed down from generation to generation. Besides this early brain-work, stimulating flesh-meat and drinks are used instead of a purely vegetable and farinaceous and milk diet, which would give them more muscle and less fire. I have been greatly struck with the difference between my free hospital patients and my establishment patients. The former are all of the labouring class, the latter of the educated classes. The labouring class are cured of diseases at my free hospital in one-third of the time usually that the others require; and the more difficult cases of nervous dyspepsia are comparatively rare in the labouring class, whilst they form the majority in the other.

IMPURE WATER is often the cause of unsuspected injury to the health. We experienced this at Cheltenham in 1851, when occupying a house in which the beautiful soft water from the new water-works was kept in a leaden cistern. My wife was affected with symptoms of poisoning, and after several weeks, I found the cause was owing to the water. On examining the lead cistern, which was closed up and never cleaned, the inside had a coating of swarf like that on the axle of a carriage. When we found out the cause and used water which had not been in a lead cistern, my wife soon recovered. The best soft spring water will soon cause a coating on any lead cistern, and there are, I believe, many such in use. Mr. F. Danchell, of 38, Red Lion-square, London, sells a very neat little pocket test apparatus, price 10s. 6d., and his little pamphlet, "Water; its Impurities and Purifications," gives much information on the subject.

NERVOUS IRRITATION FROM EARLY BAD HABITS so often contracted at school and which ruins the constitution unless proper means are used to counteract the mischief. Medicines of any kind or caustic only aggravates the ailment. I have had the pleasure of rescuing many from the tyranny of this sad delusion. Avoid all acids, condiments, or stimulants, ale, wine, spirits, or tobacco, &c., bear with the feeling of weakness and depression of spirits, avoid long walks, which tire the spine, or long standing, tight trousers, injurious hot rooms, late hours, or exciting scenes, or anything that excites the imagination. Change of scene and occupation in the open air good. For treatment see Home Treatment in index, and besides use 85 or 86 for three or four minutes twice per day; if cold weather cover over while in, or 107 (see cut of Ladies' Sitz Bath); 115 good; 111, 112, 113, 120 to 125 inclusive; 18 or 19 good; 157 and sometimes 137; 48 and 50 for liver; and stomach 235 day and night, or 236, or 163. A great point must be to attend to keeping warmth over the stomach—a mustard plaster good; 73½ good. There is always great weakness of the stomach, and on that account it is all important to keep up external warmth there. Sometimes 220 necessary, and always safe; the 123, 124, 125, 128, very soothing and invigorating; 130½ and 131 always good; but great patience must be exercised until well.

DANGER TO LIFE IN OLD OR WEAKLY PERSONS, or those with imperfect teeth, taking animal food not easy of digestion or imperfectly masticated. Many such die of fits, as the late Duke of Wellington did after a hearty meal of venison in the evening.

SYNCOPE SENILIS, ARISING FROM GASTRIC IRRITATION. By JOHN HIGGINBOTTOM, ESQ., F.R.S., *Fellow of the Royal College of Surgeons. Read before the Nottingham Medico-Chirurgical Society.*—"I have given the name of 'syncope senilis' to this affection, particularly to direct the attention of the profession to the aged. The same complaint is common to all ages, but in a more aggravated form in infancy and old age. I am not aware that the affection has been specially noticed by any author, except under the head of indigestion, and the sufferers themselves often call it a bilious attack. I do not think that the symptom of syncope is so apparent in infancy; and I believe in middle age the attacks are slighter, and not often serious. The syncope in old age is very apparent, and is the first symptom requiring prompt attention; for if remedies are neglected, the complaint becomes sometimes much aggravated, and is followed by convulsion and death.

"It is about thirty years since I first noticed particularly the syncope senilis. The subject was about seventy years of age. I thought at that time it was a precursor of an attack of apoplexy, the patient having had a slight paralysis when about twenty-three years of age, which affected him slightly through life. I was glad to find, on his recovery, that there was no increase of his paralytic symptoms. Since that time I have often observed the same syncope, unattended by any permanent ill-effects. My patients have been from sixty-eight to eighty-six years of age; the youngest sixty-eight, the oldest eighty-six. I am not aware that they have laboured under any organic disease whatever; but we all know, that at an advanced age the brain and heart, the nervous and vascular system, are frequently more inactive, and in an impaired condition. In the cases I have attended of syncope senilis, gastric irritation appears to have been the sole cause of attack. At that advanced age, mastication of the food is very imperfectly or not at all performed, for want of teeth; solid animal food has been eaten when the stomach has been in an unfit state to assimilate it, usually after having had a longer walk than the patient has been accustomed to, or had more muscular exertion than usual, so as to produce fatigue, and sometimes after exposure to cold; all which tend to weaken the power of the stomach. On this account, the food remains an indigestible mass in the stomach, and gives rise to gastric irritation, producing syncope and convulsion, which sometimes follow, often slight at first, but becoming more formidable, or even fatal, if proper remedies are not promptly used. I was called to a patient about three o'clock in the morning, his wife

having been awoke by his hard breathing and noise in the throat. She found her husband was in a fit. I was directly sent for. When I arrived he had partially recovered, but very soon after he had a second fit, which had the appearance of a slight attack of epilepsy, attended with convulsion, but had no bitten tongue, as is usual in severe attacks of epilepsy. As soon as he was sufficiently recovered from the attack, so that he could swallow, I gave him half a drachm of the powder of ipecacuanha with fifteen grains of bicarbonate of potass, which was followed by full vomiting; he ejected lumps of solid beef, which appeared to have been swallowed, or rather bolted, without having been masticated at all; one of the pieces, I observed, was about an inch long and three quarters of an inch in thickness. Although the food had been taken into the stomach about sixteen hours, the acute corners and edges of the beef appeared as if just cut with a sharp knife, not the least digested. No further remedy was required after the emetic, but attention to the bowels, which he reluctantly submitted to, saying he was quite well. In a month afterwards he had another fit of a similar nature. He fell down in a moment on the floor, and remained in the same state as in the former case for half an hour; the same remedies were resorted to as before, and he recovered quickly. I expect the patient will have a return of the syncope, as he is very wilful, and will not attend to any means of prevention. This patient was the youngest, being sixty-eight years of age. Previous to the first fit he had been using much muscular exertion, still being active in business.

"Another case is that of an old patient, of eighty-six years, who at intervals of a few weeks had several similar attacks of syncope. After the last fit, attended with slight convulsion, I was induced to think it had been occasioned by taking solid food, which was swallowed after imperfect mastication; on that account I forbade him the use of animal food altogether. This regimen he has now strictly adhered to for some months, except a few times having taken a small quantity of tripe. He has had no return of his fainting fit, a much longer time having now elapsed than the interval after which he had several of the previous attacks. I would make an observation here, as a contrast to the former case I have related in the younger man, that at a more advanced age the patient does not recover so quickly from the attack, but requires particular attention to the digestive organs for some days, with gentle aperients, and saline medicine in a state of effervescence." (*Aperients are unnecessary and injurious. I recommend drinking a quantity of warm water and exciting the throat with a finger or feather, to produce vomiting.—J. S.*)

Dr. Marshall Hall observes in a paper in the *Lancet*, of October 30, 1852, "On the malady of the late Duke of Wellington:"—"It is obvious that if efficient vomiting could have been induced, the offending cause of this lamentable malady would have been removed, and all might have been well; he would, humanly speaking, still be with us. We have no evidence that the Duke of Wellington had any organic disease of either the brain or the heart. It is to be regretted that there was no post-mortem examination.'

It might be thought by some individuals that abstaining from animal food at the period of old age might be attended with the loss of health and strength. I had an instance in a relation of my own family, who, at seventy years of age, quite abstained from animal food, and also from wine. After the lapse of ten years, when at the age of eighty, he was requested by his relatives to resume his animal food and wine, he excused himself from taking either of them, by saying he did not want them; for he was very healthy, and in good spirits, though he was very thin in body. He lived till he was nearly ninety years of age. This old gentleman, I apprehend, would have been a likely subject for the syncope senilis, had he been in the habit of taking solid animal food, which he could not masticate, and would most probably have shortened his days. At an advanced age, when the physical powers of the body are declining, and second childhood approaching, and at that period when comparatively little exercise only can be taken, the body does not require the same solid food. Nature points out the use of milk and light farinaceous matter as an aliment, as being more natural, and adapted to that period of life; such food alone is sufficient to keep the body in a healthy, cheerful, and happy state. It has been erroneously stated that "wine is the milk of old age;" I believe the truth is, that milk is the wine of

old age, for both the first and second childhood, the most natural and the most nutritious. Erasmus Darwin used to say, "Milk is white blood." The oldest individuals I have known have lived principally upon milk diet. Second childhood may be treated much in the way as directed by the late Dr. James Hamilton, Professor of Midwifery in the University of Edinburgh: "Plenty of milk, plenty of flannel, and plenty of sleep or rest."

HYDROPATHIC APPLICATION IN EXTREME WEAKNESS, AND TO THE DYING.—I shall not forget calling upon a late dear friend, a lady nearly eighty years of age, who was dying from natural exhaustion of the whole frame. Her sufferings were great, simply from the stomach, liver, and bowels being worn out; the vitality and power of action all but gone. Naturally of a healthy constitution, life lingered in the body while there was but a spark to keep the heart moving. On the top of a chest of drawers in the room was a whole row of physic bottles. The doctor, kind and attentive, and celebrated for his skill, had done his utmost to give relief, but was entirely unsuccessful; even morphia, and the most approved sedatives, failed in the usual effect they produced in the earlier stage of the illness. The stomach had lost its heat and vital power to assimilate and dispose of its contents any longer. I advised gentle fomentation at once to the back and front of the body, with one wrung-out flannel pad, covering the pad with a piece of light mackintosh to keep in the heat, as the fomenting-can might be too heavy. This gave immediate relief, and after it had been on twenty minutes it was taken off, and with as little disturbance of the body as possible. The parts were then wiped with a napkin wrung out of warm water, and with another soft dry napkin gently wiped dry, having afterwards a broad, dry, warm flannel bandage to put round the body. Whenever the pain returned, a fomenting-can, wrapped in flannel, was put over the stomach and bowels, and if it appeared necessary, fomenting again, but only in the stomach, as in such cases care must be observed not to fatigue the body more than possible. If the legs and feet be wrapped in hot mustard cloths, and dry over to keep them warm, it will be of great service, and then wrap them in dry flannel afterwards. Water is by far the best beverage in these cases, and that all but cold. By these gentle means of keeping warmth over the stomach and bowels, nature will be assisted and soothed to the last. Discard all physic whatever. If the bowels should be swollen or uncomfortable, and constipated for days, then apply a gentle warm-water enema. A large piece of spongio piline, sprinkled with a little hot water, and bound over the stomach and bowels, and kept on with a flannel wrapper, or tied on with tape, will keep in the vitality, and do great service. Castor oil, which is generally considered a simple and harmless medicine, Dr. Quain, in his work on the rectum, says, is irritating from its acrid properties, and he cautions against the use of it. Shortly after I attended the case named, a near relative of mine, a lady, nearly eighty years of age, lay in a similar state, and her gratitude to God for the relief afforded by these natural, harmless means I shall never forget. I have witnessed the same effect on young persons dying. It is simply keeping the vitality up by artificial warmth, when the body no longer possesses it naturally, or can bear stimulating internally, which has such a soothing effect on the sinking frame.

RELIEF IN A DYING CASE.—An old man named Froggatt, Matlock Bank, sent for me last week: I found him dying in great agony, and calling on God to take him out of his misery. Decay of the vital organs had come on gradually from old age, and from having in former years smoked tobacco and taken stimulants. I saw that by our plans relief could be given. I ordered a bath-man to go with a pair of fomenting pads and a fomenting can, and some sal-volatile, or spirits of ammonia. The man was fomented, as No. 64, gently for one hour, mustard plasters to his feet, and then feet and legs wrapped in flannel; after this a spongio piline full-size chest compress was put on, sprinkled with hot water. The fomentation gave immediate relief and produced sleep, and the man

had no more pain while he lived, which was several days after. A little ammonia was given in water, and only water to drink.

CAUTION TO THE DELICATE, AND THOSE IN ADVANCED LIFE.—It should always be borne in mind in the application of Hydropathy to the frame, that there is in every frame a certain amount of vital heat; some have a large amount, and can bear great changes without injury; others have less, and invalids have of course always a low amount of vis vitæ, or power of life. This little may be washed out altogether, either by too great an amount of cold treatment extinguishing the vital heat, or by too much hot treatment, relaxing the frame by over stimulating in another form; the water cures, by its beneficial effect in gently stimulating by tepid, and by soothing with warm: Nature neither must nor will be forced. The amount of life or vitality in the brain, considered in the changes which take place in a few hours, must be the guide for a judicious, safe, and effective application of this beneficial agent. A lady, about sixty-five years of age, came in April, having practised something of the cold-water treatment in the winter, and was surprised her breathing was becoming worse. I name this to caution such cases from using cold water in the winter, where there is low power of reaction. Bedrooms are often cold in winter, and especially of a winter's morning, and exposure in either sponging the body or the chest, when the weather is cold, is certain to cause congestion in elderly or delicate subjects; it is better in such cases to have no such applications until noon, and then be careful the body or the chest is exposed to the air as little as possible. The silk and flannel dry chest compress should be worn whenever and as long as there is any oppression on the chest, and sometimes take a six minutes' vapour, with tepid rubbing after will give relief and not weaken.

FLATULENCY.—This troublesome ailment is often made an excuse for taking matter into the stomach that causes all sorts of mischief. People take brandy for flatulence,—they smoke tobacco for flatulence, and some refine upon this, and get nice stimulating mixtures for it. Now all these things only aggravate tenfold the causes which produce it. Flatulence proceeds firstly from weakness in the nerves of the stomach, causing acidity, then fermentation; thus generating gas in the stomach and bowels. Strong healthy persons have no flatulence. Those who have, let them bear it patiently, until, by proper diet and rest, the stomach performs its office; flatulence will then disappear, and in no other way will it be cured. No. 76 on Bath list essential; if obstinate, No. 69, 153½; 234 night, 236 dry day. (See Stomach Disease diet.)

One of the most fruitful causes of chronic disease of the stomach, leading to a complication of many other serious and fatal diseases, is the erroneous idea that a little stimulant will improve digestion, and, when a person feels low and dyspeptic, it will do them good. Now, exactly the reverse is the fact; for when there is a feeling of indigestion, or weakness, or pain in the stomach or bowels, there is lowered vitality, or some inflammatory action, and, in either case, stimulants only add fuel to the flame. The feeling of weakness, or dyspepsia, or pain, had better be borne until the simple remedies advised in this work are tried, than to take what is certain to cause increased morbid action. We have now a patient, a man of abstemious habits, who, from too close attention to business, and not allowing himself the necessary rest and fresh air, got his stomach out of order; but, unwilling to obey Nature's law, he took first small quantities of stimulants, never in any excess, then soda; then, as the disorder increased, and unwilling to leave his business, he applied to the doctor, who first tried one pabulum, then another, until the patient was quite unable to attend to his business, and beyond all hope of recovery. The liver and lungs are now implicated, and severe inflammation of the whole mucous membrane lining of

the stomach and bowels. Nothing can be done for him, and he must soon die, in the prime of life, leaving a wife and family.

Another, hearty and strong when a young man; the anxieties of a professional life drew vitality in excess to the brain, robbing the stomach and liver; he began with small quantities of stimulants, then soda to correct acidity which was caused by the stimulants, and is quite laid aside, and for years has had a life of severe suffering, and now hopeless of ever regaining his lost health.

Another eminent and wealthy man, engaged a good deal in extensive engineering works, disregarding his own organisation, and when out of order applying to his doctor, under the idea that he could give him something to set Nature's laws at defiance, found a nearly similar result: a stomach draught to create an appetite, then a little brandy and water for digestion, plenty of animal food, claret, then Vichy water to correct acidity, brought the poor deluded man to the brink of the grave. Hot, parched tongue, almost sleepless nights, loss of flesh, and a state of misery; came just in time to save fatal effects from such a course, and is now going on well, but will never be strong again.

STOMACH PACK.—When the stomach is very irritable, it is best to lie in bed and remain perfectly quiet; taking no food, but sipping cold water; having a towel doubled and wrung out of cold water laid over the stomach, and over that a good thickness of flannel or blanket to preserve the animal heat, and chest-can filled with hot water, or mackintosh hot-water bag. Re-wet the cloth every ten minutes, and take nothing but water until sickness is stopped, if even it lasts a day or two, as no harm will arise from abstinence from food, so long as the stomach is irritable. In some severe cases we have found this the only remedy. (See 50, Bath list.)

UPON THE ADULTERATION OF BREAD.

"The bakers have discovered how to bake from damaged flour—by adding sulphate of copper, a poison, to the dough—a bread in appearance and external properties as beautiful as from the best flour. This mode of improving its physical properties of course deteriorates its chemical properties. Alum has the same effect as sulphate of copper, since phosphoric acid (contained in wheat flour) forms with the alumina of the alum a compound hardly decomposable by alkalies or acids. The addition of alum may perhaps explain the indigestibility of English bakers' bread, which strikes all foreigners."—*Baron Liebig's "Letters on Chemistry."*

"Bread should consist only of flour, yeast, and water, with a little salt. Such is the composition of genuine home-made bread, the flavour of which is so agreeable, and also so very different from that of ordinary bakers' bread. The bread we eat is saturated with alum and "stuff," and it behoves us to be careful how we add to the large amount of saline matter daily ingested. Our forefathers considered, and we think rightly, that to adulterate food, and to convert that which should be a source of health and strength into one of injury, disease, and death, was no light offence."—*Lancet.*

"Bread is frequently made of flour adulterated in a variety of ways, usually with bean-flour and alum, in variable but injurious quantities. This gives rise to acidity and flatulency, and often leads to permanent dyspepsia and ill-health. Adulterated bread, deficient of the proper quantity of gluten, which gives the heart to bread, ill sustains the strength of the working man; further, the alum makes unsaleable and unsound flour apparently sound, causes flour to absorb more moisture, and when consumed in bread occasions constipation."—*Times.*

Unadulterated bread is never very white. It can be made so by means of such adjuncts as alum, sulphate of copper, &c."—*Medical Times and Gazette.*

"The very white loaf of the bakers is in close conjunction with a very blue devil, in the shape of dyspepsia."—*Medical Circular.*

"Alum in bread has come into use, causing about ten thousand indigestions a week. And then comes the doctor, to whom the baker is the best friend he has. We have a private opinion of our own that if bread were nothing but bread, the mortality bill would decrease a remarkable percentage."—*Chambers's Journal.*

GANGLIONIC NERVOUS SYSTEM, OR NERVES OF NUTRITION.—I only give one engraving of this system; they, however, are easily comprehended from the other engravings of nerves, and only differ in appearance by being mostly ganglionic or knotted in groups. They have no common centre, but spread over the entire body wherever nutrition is required, and that of course is in every large or minute part of the frame. Lardner, in his "Animal Physics," has some beautiful cuts of this system of nerves, one large cut showing the ganglionic nerves of the whole body.

Fig. 3 is the solar plexus, commonly termed the pit of the stomach. A blow there is often fatal. The life of the body finally departs from this point, hence the necessity of keeping up warmth over this part.

VIEW OF THE ORGANIC NERVES OF THE STOMACH.—*Dr. Smith.*

1. Under surface of the liver, turned up, to bring into view the anterior surface of the stomach. 2. Gall-bladder. 3. Organic nerves enveloping the trunks of the blood-vessels. 4. Pyloric extremity of the stomach and commencement of the duodenum. 5. Contracted portion of the pylorus. 6. Situation of the hour-glass contraction of the stomach, here imperfectly represented. 7. Omentum. The electricity or vital power in the nerves, 33, cause the chemical change of food in the stomach, and is the first commencement of action in digestion.

"The organic nerves are spread out in countless numbers upon the great trunks of the arteries, so as to give them a complete envelope; these nerves, never quitting the arteries, accompany them in all their ramifications, and the fibril of the nerve is ultimately lost upon the capillary termination of the artery. It is by these organic nerves that the stomach is enabled to perform its organic functions, which, for the reason assigned, is placed beyond volition, and is without consciousness. By the nerves derived from the sentient system, which mingle with the organic, the function of nutrition is brought into relation with the percipient mind, and is made part of our sentient nature. By the commixture of these two sets of nerves, derived from these two portions of the nervous system, though we have no *direct* consciousness of the digestive process—consciousness ceasing precisely at the point where the agent of volition stops—yet pleasurable sensation results from the due performance of the function. Hence the feeling of buoyancy, exhilaration, and vigour, the pleasurable consciousness to which we give name of health, when the action of the stomach is sound: hence the depression, listlessness, and debility, the painful consciousness which we call disease, when the action of the stomach is unsound: hence, too, the influence of the mental state over the organic process; the rapidity and perfection with which the stomach works when the mind is happy—when the repast is but the occasion and the accompaniment of the feast of reason and the flow of soul, the slowness and imperfection with which the stomach works when the mind is harassed with care, struggling against adverse events, or is in sorrow and without hope, when the friend that sat by our side, and with whom we were wont to take sweet counsel, is gone, and therefore gone that which made it life to live.

"The electricity in these nerves gives power to every part of the body to attract nutriment from the blood as it rapidly passes in the blood; destroy these organic nerves by caustics, incessant sloughing and cancer are the certain consequence, hence thousands are destroyed by such means, as well as setons, and issues, and scarifying, or the application of mercurial ointment.

"Renovation is the primary and essential office of the stomach, and its organic nerves enable it to supply the ever-recurring wants of the system. Gratification of appetite is a secondary and subordinate office of the stomach, and its sentient nerves enable it to produce the state of pleasurable consciousness when its organic function is duly performed. By the double office thus assigned it, the stomach is rendered what Mr. Hunter named it, the centre of sympathies.—*Dr. Smith.*

The Fourth Order of Nerves, commonly termed the nerves of organic life, or nutrition, or ganglionic system. These nerves, by their vis vitæ, or power of life, have entire control over the organs of circulation, nutrition, secretion, absorption, and excretion. They have the same structure as the spinal cerebral nerves, tubular, and filled with fluid; encased in sheaths, and act by their electric powers; and so identical is this property, that the power of one order is lent to or sympathises with the other in cases of emergency. As for instance, when the brain is pressed by mental exercise, the vital power of these nutritive nerves is also called into the assistance of the cerebral system; and if the mental effort be long continued, the proper function of the nutritive nerves is partially suspended, causing what is commonly called indigestion and biliousness, from the liver not acting, and so lowering the power of all the organs of nutrition and circulation. On the contrary, when the mind is not properly exercised, the vital power of the cerebral system is left to add its influence to the nerves of nutrition, and thus often produces a state of obesity, or fatness, with a tendency to apoplexy.

When food is taken into the stomach, it is there dissolved by the action of the gastric juice; but unless the vital power of the large plexus of organic or nutritive nerves (see 3 in cut) in connection with the stomach be sufficiently strong, the chemical change in the chyme or fluid does not take place; the consequence of which is acidity, followed by fermentation, causing great irritation in the stomach, duodenum, and bowels. The unhealthy matter passes into the bowels, where it is taken up by the absorbents

into the blood, and so passes into the tissues of the body, building it up with inert or effete matter, which the body then tries to throw off. If there is power to accomplish this, by boils, rash, shingles, diarrhœa, or other means, the vital organs are kept from injury; but if the vital power is low, the organs cannot resist the surcharge of morbid matter, and the result is inflammation, fever, &c., which often leads to fatal results. How often is premature dissolution the effect of injury done to this beautiful structure, by the spirit of man becoming a prey to the appetites and passions. How often is he suddenly cut off when the brain is surcharged with alcohol, in a fit of drunkenness! or he dies the awful death of a raving madman in a fit of delirium tremens, the effect of the same baneful cause.

THE LIFE OF THE BODY.

A good knowledge of the nature and action of these organic nerves, as well as of the spinal cerebral system, is absolutely necessary to enable the mind to carry out the work it has to perform with comfort and ease. The electricity in these nutritive nerves is the cause of the circulation of the blood; also the absorption by the liver of those materials out of the blood which go to the manufacture of bile or gall. It gives power to the liver to manufacture saccharine and other matters to enrich the blood, the quantity of which materials are materially altered by injuries or other causes affecting some parts of the brain, and undoubtedly often results from that organ being affected by the habits of taking intoxicating drinks to excess. It also assists in forming the red corpuscles which impart that colour to the blood, and gives power to the uriniferous tubes in the kidneys to draw out the urine, with other impurities, from the blood. It gives power to the flesh, bone, &c., to assimilate their materials out of the blood, as the blood circulates through the body. The electricity or vital power of these nerves, commonly called ganglionic or organic, is, in fact, *the life of the body;* and just as this power is in vigour, or otherwise, so is the healthy action of the system. As electricity is the motive power of the will, and is generated in the brain; so the same element exists in these nutritive nerves for the purposes above named. This electrical power, however, is more generally generated in the body, as demonstrated by works on animal magnetism, which show that in the fibrous tissues of the body molecules of magnetic principle exist. An extensive knowledge of this principle in the human body is essential and invaluable in the study of health and disease, as it is in fact the key to the principle by which the bodily powers are to be renovated or kept in health; and it is the only true principle on which to act. All attempts at curing local disease, or preserving health, without taking this principle as a basis, only leads to chance and temporary success, and ignorance of it often to the undermining of the constitution, by attempts to expel maladies by local applications internally or externally. The first point to notice is, how this vis vitæ, or power of life, in the organic or nutritive nerves, is to be kept up to its proper force. This is only to be accomplished by strict obedience to the natural laws framed by the Creator as conditions of health. The high privilege of freewill enjoyed by man above all others of God's creatures is, when under the influence of religion, a source of supreme happiness to him; but by his perversion of this high privilege, in the indulgence of his carnal appetites and passions, he renders that precious gift of his Creator a source of misery and suffering in this world, and eventually of his eternal ruin. When man brings his body into subjection, and is guided in his actions by the all-wise, immutable, beneficent laws laid down in God's word for his happiness, he takes food and drink only for the purpose of enabling him to perform the mission God has appointed him, and brings his body, with its animal desires, into subjection. Just as man governs himself by these laws, so we see him reach the high standard in the position God at first intended him to fill; but, on the contrary, when the mind gives way to the promptings of the appetites and passions, so we see a whole flood of disease and misery let loose on the poor creature which often debases him below the brutes them-

selves. Comparatively few strike out a course from their own convictions. The customs of society, fear of ridicule, or being thought singular, carry multitudes down the stream against their better judgment; and for which they have to pay by future suffering with those following these customs. Companionship, however, in suffering of this kind, I cannot conceive, affords any consolation.

The habits of life and course of diet followed by society generally are, in many points, diametrically opposed to the laws of health. Breakfast, with toast and butter, strong stimulating coffee, strong tea, especially green, which is well known to be coloured with a highly deleterious ingredient; white bread, when had from the baker's, often contains alum or other pernicious ingredients (which they say they are compelled to put in, to please the public, who will have a white light loaf); with other aliments, such as broiled bacon, salt fish, ham, with mustard and pepper; and not unfrequently have I seen, at commercial hotels, the addition of bitter ale. Then, take some luncheon, or rather a first dinner of animal food, &c., in two or three hours, with wine, ale, or porter; and, later in the day, a second and principal dinner, sometimes like the one I describe further on. Others take dinner at one or two o'clock, composed of soup, animal food, with condiments (without which the indulged palate cannot relish plain food), pastry, sweets, followed by cheese and uncooked vegetables, in the form of celery and salads, with ale, porter, and wine, and in many cases concluding with a cigar, or pipe of tobacco, or spirits; then, at five or six o'clock, tea, with toast and buttered cakes, &c. Animal food and tart again for supper at nine o'clock; with ale or spirits, cigar, or pipe, by way of finish to the day's work of eating *not to live, but living to eat.* When we compare the nature of the food thus taken with that best adapted to make sound muscle, &c., and to keep up the vis vitæ, or electric power of life, it is no wonder we see the multitude of maladies so general among mankind, debasing the tissues, and affecting the brain.

DIET.—The following is the simple plan of diet we practise, both at home and at the Hydropathic Establishment, and which we can recommend from experience to all:—

BREAKFAST.—Black tea, cocoa, bread and butter, eggs, cold meat, boiled bacon, and Scotch oatmeal porridge, with sugar and milk.

DINNER.—Varied every day, consisting of roast and boiled mutton, roast beef, fillet of veal, lamb, cold ribs of beef, cold round of beef, rabbits, poultry, fish. *Vegetables:* Potatoes, French beans, peas, cauliflowers, carrots, &c., with pure water to drink; followed by rice, sago, vermicelli, tapioca, flour, and apple puddings; cold maizena, rice, and other moulds; stewed apples, pears, and rhubarb, apricots, plums, &c. Condiments on the table, but invalids are advised not to use them. Avoid all dried fruit, as the husk is indigestible, and what is called plum-pudding (made of flour, suet, and dried fruit) is especially so. When the puddings are removed, dinner should be finished; all after does harm. Water only for beverage. In all cases a very moderate use of animal food is the best. If any chest affection, or stomach or liver irritation, animal food is positively injurious from its stimulating qualities; and in cases of constipation of the bowels animal food will greatly increase the difficulty in excrementary evacuations. In stomach affections, or weak digestion, I prescribe mutton, lamb, or fowl sandwich, without mustard, no vegetables, a little stewed rhubarb or apple. If persons will but confine themselves to simple food, they will be amply rewarded with good health.

EVENING MEAL, at six o'clock, same as breakfast, except eggs. Some slight refreshment before dinner and after the evening meal is allowed to delicate patients or any requiring it. Hot dinners on Sunday as on other days, one hour sooner. Hot refreshments for patients arriving. All meat roasted before the fire, not in ovens, nor by gas. Home-made white and brown bread, potted mutton, and, if required, broiled bacon.

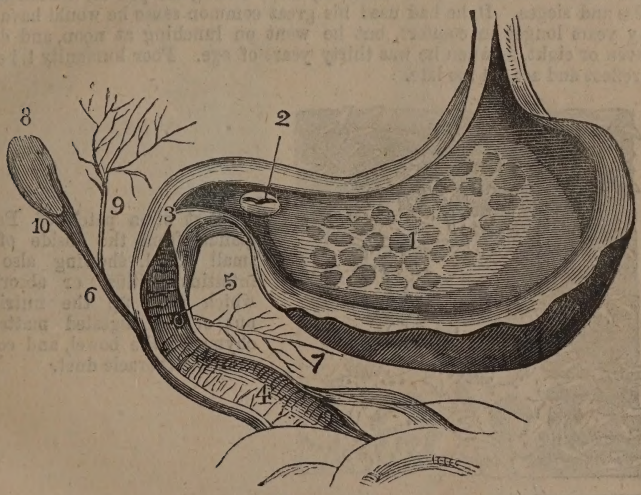
THE STOMACH, DUODENUM, COLON, SMALL BOWEL, AND RECTUM.—*From Quain.*

Fig. 1, the œsophagus; 2, the great or cardiac extremity of the stomach 3, its lesser or pyloric end 4, a constriction corresponding with the pylorus; 5, the superior, or lesser curve of the stomach; 6, its inferior, or greater curve; B, the duodenum; 7, its ascending portion; 8, its descending portion; 9, its transverse portion; 10, the termination of the pancreatic duct, opening into the descending portion of the duodenum, near its inferior angle; 11, the termination of the ductus communis choledochus; 12, the ductus communis choledochus; 13, the common hepatic ducts; 14, the cystic duct; 15, the gall bladder; C C, the small intestine; 16, the upper part of the jejunum, where it is continuous with the duodenum; 17, 17, the jejunum; 18, 18, the ileum, of a lighter colour than the jejunum; 19, the termination of the ileum in the large intestine; D, the cœcum; 20, the cul-de-sac of the cœcum; 21, the appendix vermiformis, connected with the cœcum by a delicate mesentery, 22; E, the ascending colon; F, the transverse colon, G, the descending colon; 22, 23, the longitudinal bands of muscular fibres which produce the peculiar sacculated character of the colon; H, the sigmoid flexure of the colon; I, the rectum; in which the sacculated appearance is lost; 24, some of the longitudina muscular fibres seen upon the rectum; 25, the sphincter ani.

PHYSIOLOGY OF THE STOMACH.—Dr. Pavy gives a simple physical reason why the stomach is not destroyed by the solvent power of its own gastric juice. He says that in a state of health the blood is always alkaline, and the gastric juice acid. The introduction of food into the stomach causes an influx of blood to that organ, as well as determines a secretion of gastric juice, and he conceived that the alkalinity of the former fluid protects the stomach from the action of the latter; but in deranged health these conditions are more or less changed,

and hence inflammatory action of the stomach, which condition, if greatly changed, brings on cancer of the stomach. It will be seen from this how dangerous soda and all alkali is, which weakens the blood power.

The public are generally surprised to hear that the principal operation of digestion is accomplished in the small bowel, which is usually five times the length of the person. A person six feet high will have thirty feet of small bowel, and through the whole of that length digestion goes on by aid of the Peyer's and solitary glands. The matter is then absorbed by the intestinal villus, as in cut, and conveyed through the mesenteric glands, as shown in cut, to the thoracic duct; from thence it is carried to the left subclavian artery in the left breast, where it is joined by the exhausted blood. Both together go into the heart, then propelled to the lungs, to be oxygenised and made into scarlet arterial blood; and then returned to the other side of the heart to be propelled through the body for its support. The terrible mischief and destruction caused by purgatives will be seen from relaxing and poisoning the intestinal canal.



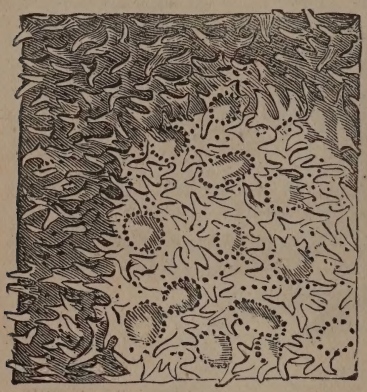
THE STOMACH.

1, mucous membrane, forming the rugæ; 2, pyloric edifice opening into the duodenum; 3, duodenum; 4, interior of the duodenum, showing the valvulvæ conniventes; 5, termination of; 6, the biliary or choledoch duct; 7, pancreatic duct, terminating at the same point as the choledoch duct; 8, gall-bladder removed from the liver; 9, hepatic duct proceeding from the liver; 10, cystic duct proceeding from the gall-bladder, forming, by its union with the hepatic, a common trunk, the choledoch.

"DIGGING GRAVES WITH THE TEETH" may be rather a vulgar expression, but, nevertheless, it is in a host of cases very true. When we read the descriptions from works of anatomy of the structure of the stomach and the whole digestive system, it is a wonder how the frame resists the treatment it is subject to from the habits of mankind. When, from the cuts in this work, we see first epithelium lining of the throat, then the mucous lining of the stomach and duodenum; and then see the cut of the delicate and elaborate lining of the

bowel, the intestinal villus, the Peyers, and the solitary glands, all made to concoct proper ailment; and when we think of the hot wine, spirits, and highly-seasoned food which these delicate organs are called upon by ignorant or sensual persons to bear, we cannot be surprised at the certain consequences in suffering and disease, and shortening life.

In this neighbourhood I can point to persons active, with the full possession of their faculties, and free from disease, from seventy-five to ninety years of age. Fortunately for them they are all poor, or not in a position to indulge in what is so falsely called good living. Some do not taste animal food above once a week. Weak persons and those advanced in life should remember weak stomachs cannot do the work of the robust; but feeling weak, which is their normal state, and in which they may go on to a great age without suffering, they put work on the engine till it breaks down. A hearty dinner of venison caused a fit and killed the Duke of Wellington, after having escaped all the dangers of battles and sieges. If he had used his great common sense he would have lived many years longer in comfort, but he went on lunching at noon, and dining at seven or eight, as when he was thirty years of age. Poor humanity! he does not reflect and act till too late.



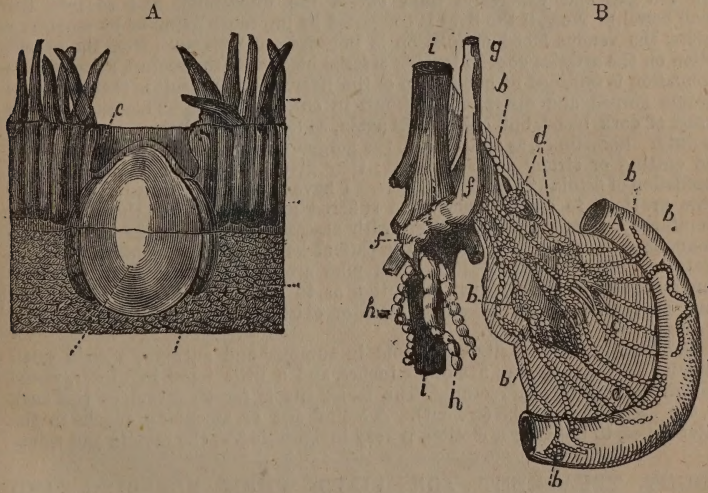
Part of a patch of Peyer's glands from the inside of the small bowel, showing also the intestinal villus, or absorbents which take up the nutriment out of the digested matter or chyme in the bowel, and convey it to the thoracic duct.

One of the solitary glands in the bowel; all these glands either take up matter and change its character, or they give out matter to aid in the processes of assimilation.

EATING WITHOUT APPETITE.—It is wrong to eat without appetite, for it shows there is no gastric juice in the stomach, and that nature does not need food, and there not being any fluid to receive and act upon it, it would remain there only to putrify, the very thought of which should be sufficient to deter any one from eating without an appetite. If a tonic is taken to stimulate appetite, it is a mistaken course; for the only result is to cause craving, when already an amount has been taken beyond what the gastric juice supplied is able

to prepare. The object to be obtained is a larger supply of gastric juice, not a larger supply of food; and whatever fails to accomplish that essential object fails to have any efficiency towards the cure of dyspeptic disease; and as the formation of gastric juice is directly proportioned to the wear and waste of the system, the means of supplying this wear and waste can only be by exercise in the open air and proper diet.

A is a side view of a portion of intestinal mucous membrane imbedded in the submucous tissue. The small points project inside the bowel, and take up the nutriment. B is a portion of small bowel attached to the mesentery, showing the lacteals proceeding through the mesentery to convey the nutriment from the bowels to the thoracic duct. The dotted appearance of the lacteals shows the glandular structure, and in these glands the chyle or nutriment undergoes an important change before it reaches the thoracic duct.—*Grey's Anatomy.*



A A, a portion of the small intestines (jejunum); *b b b b*, lacteal vessels; *c c c*, the mesentery; *d d*, mesenteric glands *f f*, the receptacle of the chyle; *g*, thoracic duct; *h h*, lymphatic vessels from other parts of the body; *i*, the aorta.

Piles when Causing Extreme Pain.—Apply fomenting-pad squeezed out of very hot water to the painful part whilst preparing 98; and after 98 have 144, with 153 same time; afterwards rub over the trunk and legs with tepid wrung-out towel; then well wrap thighs and legs with new flannel strips, and if to be had, sciatica leg-cases over (see Index). If a band of damp spongio kept on the seat all the better—169 or 171. If no relief first operation, repeat until ease, or the piles bleed freely—48 would do good next day. These severe seizures come on generally from cold, and warmth only will bring vitality to the parts, and remove the congestion. After the severity of the attack is over, these hot applications will not be suitable, as they would relax too much. Of course, persons subject to these attacks must avoid all means of aggravating them, or bringing them on. Sitting on soft cushions, much walking or riding injurious, and all stimulants, and especially aperient medicine or tobacco;

stimulating seasoned food bad. The application of our pomatum (see Index) useful, and allays irritation. No caustic or cutting. The common idea that the bowels must be made to act every day—by aperients, if not naturally—is sure to bring on piles or disease of the rectum and small bowel. Castor oil is particularly injurious, and will bring on piles in a healthy person. Castor oil is acrid, and highly injurious to the stomach and bowels. The use of any kind of purgatives, aloes, for instance, causing piles in a previously healthy person.

But to go to the real origin of this troublesome and often fatal disease, which brings on organic disease, we must consider the law of circulation of blood. Arterial blood must be forced to the rectum and anus for nutrition of the parts, and there, at the terminal points of arterial circulation, the blood which has become exhausted of its nutritive qualities enters the venous circulation (see cut of veins). The valvular system in the veins propels the venous or exhausted blood up through the rectum to the liver, to have the gall or bile extracted, for stimulating the bowels to action. (See stomach cut, where it is shown how the gall and pancreatic fluid enters the duodenum, and so into the small bowel.) Now, if the liver is congested by improper living or by sedentary habits, the venous blood circulation is impeded; the pressure from the heart's action on the arteries goes on forcing arterial blood into the rectum; the venous circulation is impeded by congestion of the liver, and the result is that the veins become gorged and distended, as shown in cut, and burst. This lets out the excess of dark blood, but only to fill again, so long as the liver cannot perform its duty. Sometimes, as seen in cut, the gorged veins protrude outside the anus, and cutting or strong acids are used; they give temporary relief, but lay the foundation of fistula and chronic abscess. I have had cases operated upon twenty years previous to coming, who have suffered more or less all the time from operations, and in some cases even with abscesses formed in the rectum, and pronounced incurable, and, in fact, the patient left to die, but by our renovating treatment has got sound. But when piles are bad, and have been of long standing great patience, great resolution as to diet, drinks, and habits of life, must be exercised, if a miserable state of existence is to be avoided. (See Treatment for Piles.)

The habitual use of sitz baths, cold in summer and autumn, with a small quantity of water in, say five or six inches, and a little tepid in winter, would prevent diseases of the rectum. The ladies' sitz is most convenient (see cut), or the ascending douche (see cut). A ladies' sitz or ascending douche in the water closet, to use after a motion, is very invigorating to the rectum and spine.

SLIGHT TREATMENT FOR PILES WHEN BLEEDING AND TENDER.

No. 123 morning and night, except when 78½ is required, and "foment" with warm pad (not hot) the tender part during each. During the day take 105, with tepid vinegar and water, for two or three minutes; not enough vinegar to cause much smarting, and, if able, repeat this three or four times a day, and a gentle 119½ after each.

13½ or 20 also occasionally, and body bandages, varied according to the time of year and strength of patient. (See Bath list 103½.)

IRRITATION OF THE ANUS OR SEAT.—This is often a very troublesome ailment. Sometimes it is caused by worms in the intestines; it is, however, a very common complaint without worms; in these cases, it proceeds from inflammation of the mucous membrane lining, and that inflammation from stomach derangement, the inflammatory action communicating from one part to another, as the mucous membrane lining the stomach and bowels is one continuous network. Abstinence from all stimulants and flesh-meat, coffee, salt

provisions, and the use of the sitz bath, 70 degrees, for four minutes, two or three times per day, is the best relief we have discovered. Aperient medicines will cause the irritation; and tight-fitting clothing to the part, sitting on sofas or soft chairs, causing an injurious degree of heat and keeping in perspiration, Cane-bottom chairs are by far the best. 105½ hot soap-suds five min., 119½. pomatum applied often to the anus being very useful. (See Index.)

Engraving IV.—The bowel being partially laid open and stripped of the mucous membrane, enlarged and tortuous veins are shown, terminating in the hæmorrhoids (piles), which are seen to hang below the sphincter *a*, the cut edges of the bowel at the upper end of the division; *b*, the sphincter; *c*, hæmorrhoids, where cut through; *d*, the veins outside the gut; *e*, the vein within, seen to be large and tortuous; *f*, piles formed by the congested blood-vessels bein distended.

Fistula.—Treatment of case of fistula of a lady who had been under all the usual routine of medici e and doctors' appliances without any avail, and whose shrieks were most terrible when action of bowels took place, and for hours extreme pain lasted, so that when she came to our establishment she was worn to a skeleton. My wife immediately commenced with our soothing 231 and

applying linseed 220 to the affected parts, and used 58, with our "Home Apparatus Steamer," which is very effectual, and can be used to any part of the body, by directing the gutta-percha tube to the ailing parts. She got well. She also found 130 and 131½ very useful, for sleep had nearly left her. 214 and 195 kept the heat also in lower limbs. With the use of the bed-pan, therefore, she was never allowed departure from the horizontal position till nature had in some measure healed the sore; then commenced with gentle and warm 119½, 105½, and what slight spinal treatment she could bear, but did not allow any walking or standing. The result is that a perfect cure was effected, and nature's actions were as natural and easy as an infant's, and gaining a stone in weight was a proof that the good blood was renewing the whole body. These are the joyous recollections of our lives, and well repay us for our incessant work the last twenty-one years.

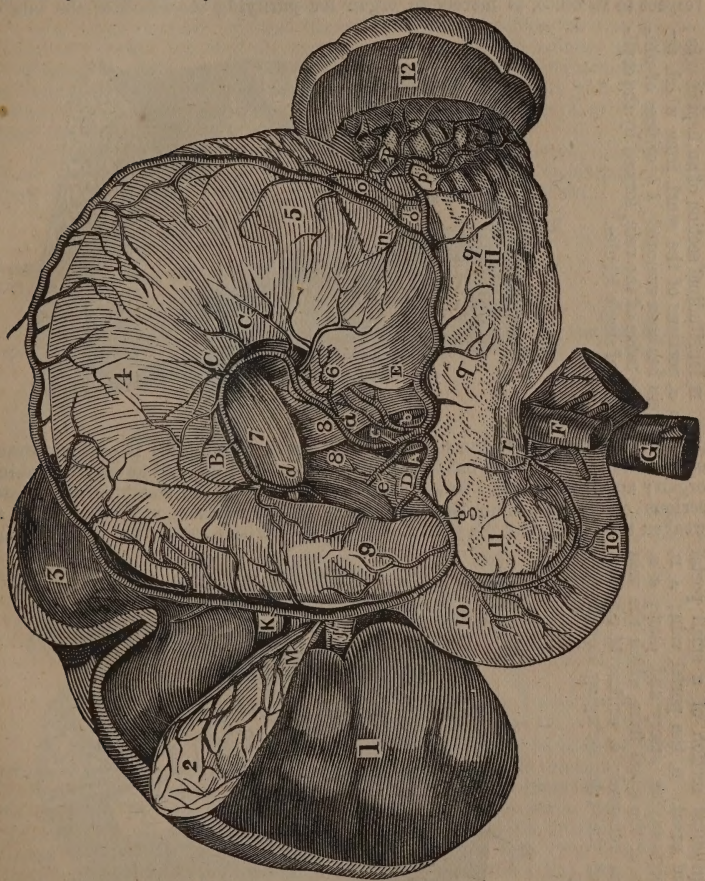
DISEASES OF THE RECTUM (*the last part of the bowel*), PILES, AND FISTULA.—The engraving is from "Quain's Diseases of the Rectum;" the illustrations in the work are finely coloured. I have inserted these for the purpose of showing the nature and cause of piles, a complaint so common from drinking ardent spirits and other alcoholic beverages, from sedentary habits, taking purgatives, calomel, castor-oil, salts, or any aperients, and especially spirits of wine, which clog, and the want of cold-water application in the form of sitz baths. The blood veins are shown gorged and enlarged from want of muscular power in the vein to propel the blood, causing distension, and eventually permanent enlargement and abscess.

An Easy Lesson in Physiology.—Supposing your age to be fifteen or thereabouts, you have 160 bones and 500 muscles; your blood weighs 25 pounds, your heart is five inches in length and three inches in diameter, it beats seventy times per minute, 4,200 times per hour, 100,800 times per day, and 36,722,200 times per year. At each beat a little over two ounces of blood is thrown out of it; and each day it receives and discharges about seven tons of that wonderful fluid. Your lungs will contain a gallon of air, and you inhale 24,000 gallons per day. The aggregate surface of the air-cells of your lungs, supposing them to be spread out, exceeds 20,000 square inches. The weight of your brain is three pounds; when you are a man it will weigh about eight ounces more. Your nerves exceed 10,000,000 in number. Your skin is composed of three layers, and varies from one-fourth to one-eighth of an inch in thickness. The area of your skin is about 1,700 square inches. Each square inch contains 3,500 sweating tubes or perspiratory pores, each of which may be likened to a little drain-tile one-fourth of an inch long, making an aggregate length of the entire surface of your body of 201,166 feet, or a tile ditch for draining the body almost forty miles long.

THE ORGANS OF THE ABDOMEN.

Dr. Smith says the contents of the abdomen consist of the organs which belong to the apparatus of digestion, and of those which belong to the apparatus of excretion. The organs which belong to the apparatus of digestion are:—1. The stomach. 2. The duodenum. 3. The jejunum. 4. The ilium. (The three last organs are called the small intestines, and their office is partly to carry on the digestion of the aliment commenced in the stomach, and partly to afford an extended surface for the absorption of the nutriment as it is prepared from the aliment.) 5. The pancreas. 6. The liver. 7. The spleen. (The three last organs truly belong to the apparatus of digestion, and their office is to co-operate with the stomach and the small intestines in the conversion of the aliment into nutriment.) The organs which belong to the apparatus of excretion are:—1. The large intestines, consisting of the cœcum. 2. The colon. 3. The

rectum. (It is the office of these organs, which are called the large intestines, to carry out of the system that portion of the alimentary mass which is not converted into nourishment.) 4. The kidneys—the organs which separate in the form of the urine an excrementitious matter from the blood, in order that it may be conveyed out of the system.

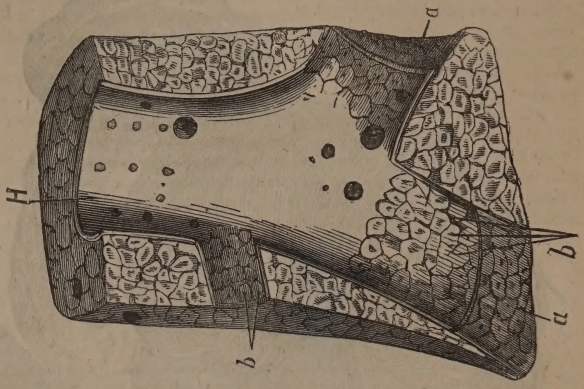


THE STOMACH, LIVER, AND PANCREAS

The stomach is here shown as it appears when drawn upwards; thus bringing into view the pancreas, duodenum, and spleen, with their respective arteries. 1. The right lobe of the liver. 2. The gall-bladder. 3. The left lobe of the liver. 4. The middle parts of the stomach. 5. Its larger or left extremity. 6. The junction of the œsophagus with the stomach. 7. The lower part of the

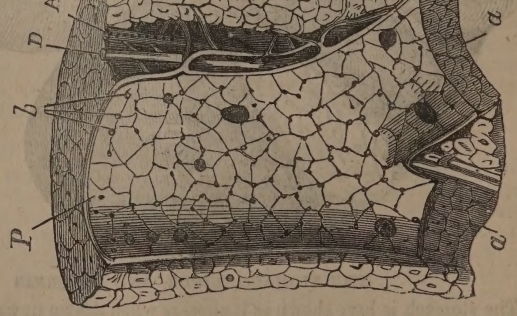
left lobe of the liver. 8, 8. The crura of the diaphragm. 9. The pylora. 10, 10. The duodenum. 11, 11. The pancrea. 12. The spleen.—*Quain and Wilson.*

THE LIVER.—Until within a comparatively recent period, the entire functions of the liver have been little understood, and little has been written on the subject. "Budd on the Anatomy and Functions of the Liver" is considered the best work. The liver has been, and is now, too commonly considered, with respect to its office, as merely an organ for purifying the blood of the bile or



H, longitudinal section of an hepatic vein; *a a*, portions of the canal, from which the vein has been removed; *b b*, orifices of ultimate twigs of the vein, formed by the capillaries of single lobules.

gall and applying it to the stimulating of the bowels. This is one important office which it performs; but it has other important functions as a blood-making organ; and from this not being taken into account in the treatment of disease, serious errors are committed by giving strong doses of medicine, which so weaken the organ, that its power of forming nutritive matter for enriching the



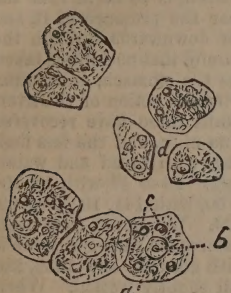
Longitudinal section of a small portal vein and canal. P, the portal vein; A D, the accompanying artery and duct; *a a*, portions of the canal from which the vein has been removed; *b*, orifices of ultimate twigs of the vein springing immediately from it.

blood is sometimes destroyed. Saccharine matter, or sugar, and the red corpuscles in healthy rich blood, are extensively formed in the liver, and pass into the circulation. When the exhausted blood enters the liver by the hepatic artery, or vein, it has no red corpuscles, but is charged with impurities drawn

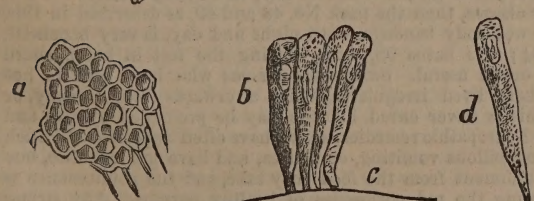
out of the various tissues, exhausted mucous, and lymphatics; here the blood is subject to a process through the electric power of the ganglionic or nutritive nerves, by which the impurities are formed into gall, and deposited in the gall-bladder, from where it is expelled, through the gall-duct, into the duodenum, where it mixes with the digested food and pancreatic juice, from the pancreas or sweetbread, and passes into the bowels, where it acts as a stimulant.—*From Dr. Budd "On the Diseases of the Liver."*

It is not in the liver only that the cells perform this office, for it seems established as a general law, that all true secretion, whether in animals or in plants, is effected by the agency of cells; that, "however complex the structure of the secreting organ, these nucleated cells are its really operative part." In each secreting organ, the secreting cells have a peculiar power to form, or to withdraw from the blood, the secretion proper to the part.

On examining these cells of the liver under the microscope, it is seen that most of them enclose small spheroidal globules, which are recognised, by their dark outline, or high refractive power, to be globules of oil or fat.



Nucleated cells of the liver; *a*, the nucleus; *b*, the nucleolus; *c*, fat-globules; *d*, cells of small size, detached.



Nucleated cells of the gall-bladder, as seen under a high power; *a*, pavement formed by the union and apposition of the cells; *b*, side view of four cells; *c*, the basement-membrane; *d*, a detached cell.

The blood which enters the liver by the hepatic artery fulfils three functions, it nourishes the liver; it supplies the excreting ducts with mucous; and, having performed these purposes, it becomes venous, enters the branches of the portal vein, and contributes to the secretion of the bile. The portal vein fulfils two functions: it conveys the blood from the artery, and the mixed blood to the coats of the excreting ducts. It has been called the vena arteriosa, because it ramifies like an artery, and conveys blood for secretion; but it is an arterial vein in another sense, being a vein to the hepatic artery, and an artery to the hepatic vein. The hepatic veins convey the blood from the lobular venous plexuses into the vena cava inferior.—*Hooper.*

In ordinary livers these oil or fat globules are small and few in number; but in the fatty condition of the liver so often found in persons dead of consumption, and in that induced by keeping animals exclusively on fatty substances, they are so large and numerous, as to distend the cells to double their natural size, and consequently to cause a great increase in the volume of the liver. The cells at

the circumference of the lobule usually contain a larger amount of oil than the cells near its centre.

LIVER COMPLAINTS are commonly shown by the yellowness of the complexion, and what is ordinarily termed biliousness, attended by sickness, nausea, furred tongue, headache, and disagreeable taste in the mouth; and lowness of spirits, sometimes amounting to mania, from the vitiated bile circulating in the blood, and thus coming in contact with the sensitive nerves in the brain. As liver complaints arise from various causes, I can only, in this limited work, give some general advice. The most ordinary symptoms of disordered functionary action of the liver are, as I stated above, the yellowness of complexion, nausea, headache, &c.; the bile, from want of electrical power in the organic nerves, is not taken out of the blood, arising from over-fatigue or improper food, but goes on circulating in it, sickening every part of the body it comes in contact with, until the blood is so impregnated that jaundice is often produced. What bile does pass into the duodenum, or small stomach, is so acrid that the delicate nerves in the mucous membrane cannot bear the presence of it, and immediately expel it, either upwards by vomiting, or downwards through the bowels, causing diarrhœa. First, it is necessary to be careful that nothing is taken into the stomach to cause increased irritation; and as the stomach, duodenum, and bowels more or less sympathise, when there is obstructed action of the liver, little food, and that of a very simple kind, is best until these have recovered their tone. *No stimulants or coffee* should be taken; no milk, and the less flesh meat the better; and if any, a little cold lean meat, with bread and water, and no vegetables, but farinaceous puddings without egg. 46 or 47, with 13, 10; or 64 with 141, 14; or 69, 141, 19, and 48 often; also 50, with 141, 10; also 59. Bandages 163, with 169 over it; or 234, 236 dry, or 169. Whenever, from over-fatigue, I become bilious, I find foment pack 46 soon restores me; generally one is sufficient, or 98 at bed-time ten or fifteen minutes, with good 12 and 168¾, 220 under, or 174, with 169¼ in night, and 234 in day, all slightly wetted. When there is chronic liver disease, then the pack No. 48 and 49, as described in this, is very useful. The wet body bandage, worn night and day, is very beneficial, as well as 47, 69, 44¼; sitz baths 98, 115½, having the feet in hot mustard and water. No. 98 or 99 useful. Sometimes persons who have been in hot climates, and have there lived irregularly, suffer afterwards from atrophy, or waste of the liver; this is never cured, but life may be prolonged by care and the use of our gentle hydropathic remedies, as we have often experienced. Such cases are often free from bilious vomiting, or nausea, and have fair appetite, but they cannot get nourishment from the food they take, and the countenance is pallid, the blood wanting the red corpuscles of healthy persons. Any strong measures, either in allopathic or hydropathic treatment, will only shorten their lives and add suffering. Care in food, with rest, and slight applications of water to the surface of the body, according to the lowered vital power, and the constant use of bandages, 233 in night, 234 in day, sometimes 220 with chillies is sure to be beneficial. If there is continued sickness in these attacks, use the stomach pack No. 50 in list, and rest in bed. The ordinary way of treating liver attacks by calomel, is shown strikingly by Dr. Gully to be destructive to life. Mustard plasters may be freely used over the liver and stomach in bilious attacks; and being a vegetable substance, no injury can arise therefrom, as is the case with blisters or mercurial ointment. From being constitutionally bilious, and having suffered from it for twenty years, I now scarcely ever know what it is, except from over-fatigue; and then a little rest soon sets me right. I can take a greater variety of food than formerly, with comfort, and I attribute this to entire abstinence from alcoholic drinks, and the daily use of hydropathic applications. (See Home Treatment.)

The most painful and distressing affection of the liver is the formation of GALL STONES, from the liver forming impure bile, which becomes hardened in the gall bladder. These gall stones are sometimes of considerable size, and are forced through the small tube called the gall duct, sometimes rupturing it, and thereby causing death. Gall stones as large as a horse-bean are often passed, and the patient suffers intense pain on the first passing of them, but often after is scarcely conscious when they pass, from the duct being enlarged. 47, 64, 141, 98 until pain is over, then 233 in night, 234 in day, 220 with chillies over painful part; 231 and 35½ very good; hot as can be borne. (See Treatment for Inflammation; see *Stone in the Kidneys*, Index.)

LIVER DERANGEMENT AND PILES.—Slight treatment where little time or opportunity. First stop any habits which have brought the state on—stimulants, tobacco, sedentary life, over brain-work, or taking too much animal food. Stop all medicine, especially purgatives, castor-oil, or any aperients whatever. (See Home Treatment in Index.) For ordinary ablutions use 106, use 105a. 48 essential several times per week. 220 night, 236 in day; rub chillie paste over region of liver, under the right ribs; 50 good, 137 good; diet of the simplest kind and very moderate in quantity; if fore-named bandages too hot, use 163, 171 night, and 325 day; apply our pomatum to rectum and have 105 after every motion.

CASE OF CONGESTED LIVER, LONG STANDING.—I have lately shown some cases of crisis to surgeons, and they have expressed their surprise at the powerful effects produced by our simple plans. One case, a gentleman, age about fifty, the right side very weak, the knee especially, and the whole side cold. This was caused by the obstructed venous circulation. For many years this patient had been under allopathic treatment without any relief, and latterly was decidedly worse, which made him lose confidence in his doctor's prescriptions, and he came to me to try hydropathy. By applications to the skin, we soon got perspiration; then by our fomentations to the liver and bowels, Nos. 48 and 49, and our wet bandages, we soon set the stomach, liver, and bowels to work healthily; and now our object was to correct morbid action in the liver and in the viscera, but not by purging the bowels. We got a good deal through the skin, but this was not sufficient to cleanse the system. Nature had pointed out the place for effectual relief in the lame leg. We followed her hint, by using Nos. 141, 143, 137, 140, and 214, which shortly brought out a crisis, and laid the patient up in bed, with legs discharging fetid matter, apparently highly inflamed and swollen; appetite little, under this disturbance of the frame, and consequent apparent sinking. Our consulting-surgeon was alarmed with the case, and said, if it was his, he should have little hope of the man's life, and, moreover, would at once give generous diet and some stimulants.

I have named the case to illustrate the difference of our action. I replied I was quite certain that the patient would not only survive, but would become entirely sound in every part of his frame. We let Nature work, with a little assistance to cool any feverish feelings; stopped all animal food; gave only water or weak black tea to drink; and, when Nature had had time to perform her work, the patient became perfectly and entirely well, and has enjoyed excellent health ever since—now several years ago. I never knew this natural crisis do anything but good.

THE LIVER has probably the most important influence on not only the health of the body, but the efficiency of the mental powers, for when the liver does not perform its office in purifying the blood and forming gall out of the exhausted blood for the purpose of stimulating the bowels to healthy action, the impurity in the blood which the liver should remove circulates in the capillary arteries of the brain, causing depression of spirits, lassitude, and want of ability for mental exertion or enjoyment of life. Grief or disappointment immediately lowers the power of the liver, and the ignorant attempts at a remedy by stimu-

lants and tonics aggravate the congestion and often destroy life, or render it a misery. Suicide is frequently the consequence of congested liver. The depression of spirits and the sickening influence of bile on the whole organisation makes life intolerable. We have had the pleasure of seeing thousands of our fellow-creatures delivered from this terrible state, and taught the causes and effects and the remedy. Successful men of business go on in the enjoyment of health and good spirits until they meet with the lot of humanity, and some great, crushing disappointment prostrates them; then the doctor comes in with stimulants, good living, and, to crown the mischief, calomel to force the liver to act, which is very much like flogging a horse which has sunk from exhaustion. In a case of a friend of mine with strong heart-action not being able to propel blood through the congested liver, the delicate capillaries of the brain gave way, brought on a fit, and death. Our 48 liver pack, and our 168¾, 220, 169¼, night; 168¾, 174, slightly wetted, in day, would have saved him. Another friend came to me was told by his medical advisers that he had disease of the heart, and life was uncertain a day, which, of course, had a terrible depressing effect, causing more congestion of the liver and depression of the nervous system. I laughed at his fears and the M.D.s' opinion, and got him hearty in six weeks, and now, four years ago, he has enjoyed excellent health and a knowledge how to keep it. Another case, a merchant well known to me, I was sorry to see sink from the same cause. Tonics, sedatives to give sleep, or rather stupefaction, good living, Turkish baths, and all the random orthodox treatment, brought on dropsy from sheer exhaustion, and death. Bilious subjects are often in a low state of health from not wearing thick outer clothing in our cold winters and springs, as there is always a low power of capillary circulation on the surface of the body; by avoiding purgatives, which are ruinous to such cases, using our body bandages 168¾, 174, slightly wetted, night and morning, 169¼ dry over all in night, keeps persons in good order who never knew what it was before to feel well. Persons should never come from their bedrooms in a morning without a wash over (see "Home Treatment"), either tepid or cold, and sometimes 13, 10; a 98, if fatigued at night, with the body bandages to sleep in, will restore vitality; but if bilious subjects will not exercise great self-denial in food and drink, life must be an uncomfortable one—they must avoid all stimulating drink, pepper, mustard, and condiments, and moderate quantity of animal food, if life is to be comfortable.

CONSTIPATION OF THE BOWELS.—This formidable ailment we have never failed to overcome by simple water treatment, and without the assistance of any aperient whatever. Our experience and conviction is, that the bowels will never act naturally so long as any aperient is used. Constipation of the bowels is, however, only a symptom of ailments elsewhere. When the nervous system is in a low state, the blood poor, the circulation languid, there will be either constipation or looseness, as the proper action of the bowels depends entirely on good circulation of blood in the mesentric blood veins, giving power to the excretory vessels to draw out of the blood the excretive, and also in the vitality of the nerves, which cause the peristaltic action of the bowels. The primary cause of constipation is probably oftener caused by inaction of the liver; the gall is not formed, and passed into the bowels for their natural stimulant. No. 48 is good for this. See the intelligent article by Dr. Denham in this book, on the folly and mischief of purgatives. Thousands are destroyed by purgatives, or suffer continually from the effects of them. All purgatives necessarily lower the vitality of the bowels, and are diametrically opposed to healthy function; but from the time-honoured, though vicious, plan of "*unloading*" the bowels by the ready way of purgatives, without any regard to the constitution of the organs, it is difficult to disabuse the public of the mischief and indeed the fatal results. The use of 173 night and day, or 168¾, 174, with 172, and the home treatment. No. 69 good, also any of the following:—Nos. 46, 48, 69, 78½,

225, 206, 210, or 208. No stimulants whatever, nor coffee; the less flesh-meat the better; no pork. No tobacco, of course, as that will paralyse the action of the liver, the mesenteric vessels, and nerves. If long constipation, and no motion of two or three days, then an injection of warm soap and water may be used, or warm glycerine and water. No. 105 3 min. is good, and also see No. 78 and No. 78½, 114, 73¾. All these numbers refer to the Bath list in this book. 154 often good. If No. 163 is not warm, wear 171 over it night and day, and in night two No. 171 over 168¾, 220. (*Great warmth must be kept up over the bowels.*) 73, good. 13, 10, 11, should often be used to get good circulation on the skin, and allow the waste of the body to come freely through the pores. 73½ over right side with chillie paste and dry hand good, and easily done.

DISEASES OF THE BOWELS, commonly termed bowel complaints. The bowels are liable to various and serious diseases. The most serious, and which often proves fatal, unless taken in the early stage, is inflammation of the mucous membrane lining, and its consequent destruction, when it passes off in the form off slimy mucous, and occasionally streaked with blood. When the bowels are habitually relaxed there is weakness in the nervous power, and consequent danger of disease easily, and by trifling causes, taking place. Such cases would find great and permanent benefit from the frequent use of the sitz bath 115½ or 115 twice a day, or 106; common spinal rubbing, 114, 113, 112, while in the sitz will be of much benefit, as well as rubbing the bowels with chillie paste; or 73½, 73¾, and 235, 236 dry. Warmth and rest essential. We have cured many desperate cases I had no hopes of when they came. Some with relaxed bowels cannot wear the body bandage, but when they can do so without causing irritation of the bowels, they will find much benefit from using it a few days at a time.

The reason why bandages are only partially used at water establishments, thus causing great delay in restoring vital action, is owing to the imperfection of those used; they often really do more harm than good; which will be the case if a feeling of warmth is not produced by them. Body bandages can be thrown off at any time without any substitute, and without any fear of taking cold.

The body bandage is of great importance, and very beneficial in constipation of the bowels, liver, stomach, and affections of the kidneys, especially in pregnancy and internal irritation. It should be re-wetted morning and night. If there be inflammatory matter in the system, a crisis—rash or pimples—will probably come out, and so produce a good effect, thus acting as a counter-irritant. When this is the case, and the rash becomes sore, or discharges, simply attend to the crisis treatment as in this book; and should it become hot in the night, re-wet it; morning and evening wash over the parts with warm water and brown soap. This bandage will not produce a crisis or rash in a healthy system; and it is only where there is inflammatory matter in the system, which is always dangerous remaining in, that any crisis will be produced. Bandages are very useful at all times in soothing the stomach, bowels, liver, and kidneys; and may be worn by public speakers and ministers, on occasions of much exertion, with great benefit; however much the bandage is worn, no injury will arise. I wear it for weeks together when I have much work to go through; and never have any rash or crisis in consequence. It also tends to allay thirst, and is used by workmen in stone quarries and iron foundries, where the work is hot, for this purpose, and for support to the back. In cases where much medicine has been taken, the stimulating effects of the baths and bandages throw it off in the crisis, upon the non-vital organs, the legs, arms, and surface of the body; and so entirely replace the vitiated tissue by new and healthy formation. Wherever there is disease in the system, there the crisis will show itself, relieving the parts most affected. (See Bath list 163, &c., and 233 to 236.)

BOWELS, ENLARGEMENT OF.—Case of full habit. On rising, 73, with mustard

pad to legs, then 12½. First forenoon, 60; second forenoon, 116½ to bowels, over pad, sitting, as 128; third, as first forenoon, and so on alternately, 171 dry, 168¾, 220 back and front. (See "Enlarged Hard Bowels," next page.)

CHRONIC INFLAMMATION OF BOWELS.—The general treatment we pursue in cases of chronic inflammation of the bowels and discharge of mucous is, to use very gentle treatment, with a view of soothing the whole frame, *and avoiding any strong reaction by cold application.* First, a very gentle fomentation for twenty to thirty minutes, followed by a sitz bath, 80 or 85 degrees, for three minutes, rubbing the bowels with the hand gently, and if 80 or 85 degrees feels too cold, have the bath 90 degrees. Besides this, have a lazy pack, No. 50, and a tepid wash down, or a tepid sheet on rising and at noon; a sitz at bedtime 80 or 85 degrees, for five minutes, and no rubbing, having feet in hot flannels at the same time. Avoid all stimulants and flesh meat while there is any discharge of slimy mucous; and avoid much exercise or mental excitement. Opiates are given largely for this disease; they only allay the pain, and forcibly stop the discharge, to some extent; but as opiates are entirely foreign to nutrition, the relief is only temporary, and the reaction greater. No. 67 is useful. A late workman brought on this disease by the use of tobacco. His fine, fully-developed frame and naturally robust constitution had long withstood the deadening effects of this baneful narcotic; but he had at last to pay for the gratification of his appetite with many months of misery, and the shortening of his existence by, probably, twenty years. For the treatment of hopeless cases of this disease to the period of death, see Index, "Treatment for Dying;" and for acute inflammation.

Within the last fortnight we have been called on to administer relief to two cases, the suffering brought on entirely by the use of tobacco; and even our ordinary remedy for relief in dying cases was only partially successful; both are a good age, with very strong natural constitutions, but for many years have suffered from pains in the stomach and bowels, flatulency, and nervousness, and are now paying dearly for the gratification of the pipe by painful disease, hopeless of cure. Tobacco-smokers never die without acute suffering in the stomach and bowels.

A youth, age about fourteen, is just come to our Free Hospital for chronic inflammation of the bowels, the bowels swollen and hard, tongue fiery red, with great thirst, and purging almost constant: the case appears to be almost desperate from being neglected. He is in the service of a butcher, and has brought on this attack by taking too much animal food, producing constipation and inflammation, at first acute, now chronic. Treatment ordered: as long as the purging continues have bath No. 67 and tepid water injections. When the bowels are quieter, Pack No. 50, mustard poultices to feet, and wet head-bandage, sipping a little water, not quite cold (never drink cold water in cases of inflammation); when the last wet towel is removed, the bowels sponged with a sponge squeezed out of tepid water, and put on wet body bandage wrung out of tepid water, and flannel wrapper over. A little rice well creed in water, or sago; nothing to eat or drink cold; all nourishment must be warm; no ale, wine, spirits, or flesh meat. This treatment, after twelve hours, has caused a visible improvement in the patient, who is after ten days convalescent. This case got quite strong, and is so now, seven years since.

THE HABITUAL USE OF PURGATIVES, however small the quantity, will eventually produce disease. The idea many have of the necessity of keeping the bowels "open" by purgatives often destroys the mucous membrane lining; and the bowels will never act naturally so long as aperients are used. No harm can arise for several days', or even a week's inaction of the bowels. Stimulants and tobacco, by injuring the nervous power of the bowels, greatly tend to irregularity and disease.

DIARRHŒA.—When only slight attack, 67; if foment can is not at hand,

use a loose hot shelf from the oven, and using 105½ after each action of the bowels, and applying 174, and sprinkle the spongio piline with *chillies*, will prove sufficient; but should it not abate, 231 will be necessary, still using the 105½ as above. This latter removes any acrid matter, which generally lays in the rectum, and irritates and excites the frequent action. Diet is also particularly to be attended to. 211 will be the best—isinglass dissolved in cold water; and when jellied, take a teaspoonful every five minutes (this will take off thirst, and thus prevent the necessity of taking much water), and if much pain, toast and water will be best, but only just warm; nothing hot should be taken. If the colic pains continue, and the disease assumes more that of cholera, then the remedies laid down for that disease should be immediately and strictly followed. The general resort to opiates and chalk is most injurious, and leads to sad results, sometimes for the remainder of life; all stimulants also bad. When very faint, may have a little sago well creed in water, and a teaspoonful of brandy put into a coffee-cupful of this sago, and take it nearly cold. This acts very differently as food to the same quantity of brandy in water. Perfect rest of mind and body are most requisite, and when the disease is over, the whole system should be comforted and renovated by a little tonic treatment, such as letter F, or U, or C, whichever suits best; 236 dry in day.

WASHING OVER THE BOWELS.—In some obstinate cases of constipation of the bowels we order the bowels to be washed with hot soap and water and a flannel pad at bed-time for a few minutes: then to wipe the soap off, and rub a little glycerine, or neat's-foot oil, or chillie paste better, for four minutes; and after put on a dry flannel two or three thicknesses and sleep in it. This we have found answer when other means have failed, and especially with those far advanced in life or weak; it should be done in bed. One lady, seventy-two years of age, came for liver complaint and long constipation, and who, by having this application for some weeks, with slight bathing, got entirely well, and has since enjoyed excellent health. (See also Bath list 78½.)

WEAK BOWELS.—Use 237, 73½, Bath list, dry, and in day use 235 or 236, and Home Treatment (see Index); and see 106, 73, 73½, 114; see Diet, Stomach Disease. No fruit; dry toast good; no stimulants or tobacco.

RUPTURE OF THE BOWEL (HERNIA).

WE have no special treatment, but by attending to our Home Treatment (see Index; also special treatment, letter C) and wearing the damped body bandage under the truss, great comfort and relief will be experienced; and by the use of 86 or 107, and 75¾, and constant use of 168¾ or 163, cases have been quite restored, and able to leave off truss. The body bandage under the truss is a great security against aggravation of this complaint, and always safe, and has done great service.

ENLARGED HARD BOWELS.—Keep a large linseed 220 Bath list all round the trunk of body, and a spongio piline bandage over this regularly; the general treatment should be letters SAMECH (see Special Treatment, Index). The sitz must be of the ordinary sort, not "ladies'," and it must be deep enough to cover the bowels, and a large quantity of fine meal must be in each sitz; and instead of 70 use 78½ at bed-time.

The young Marquis Graham died last week, age twenty-five, of enteric fever, or enteritis, or inflammation of the bowels. Our treatment for inflammation, as stated in this work, by one of our bath attendants, would have saved him in three hours at most. Doctors are entirely helpless in such cases. When the inflammation or impeded circulation has set in, their opiates, stimulants, blisters, &c., are obviously useless, and so lives are sacrificed to an antiquated practice. Dr. Copland says:—"The term enteritis is most commonly applied to the commonest form of acute inflammation of the intestines, namely that in which all the three

coats of the canal are more or less implicated." We have succeeded in curing every case of inflammation of the bowels we have had or sent to, many of the severest kind. A lady friend of ours died a fortnight ago from the same disease, and left a husband and eight children. My wife would have sent a bath-woman, and saved her to a certainty, but two doctors looked on, helpless to relieve or cure, till she sank. They had no confidence in our treatment, although they knew it so well; prejudice again gained the ascendancy, and death the consequence.

This week Mr. —— has died of enteric fever, so the doctors say, after about a week's illness, age twenty-five. Now such a case would have been saved to a certainty, and quickly, by the use of our 47 Bath list, our 233, 234—220, before and behind our 137; but the doctor had nothing but internal remedies to apply, and he would know how hopeless the case was. One of my bathmen would quickly and to a certainty have cured such a case by our outward applications, bringing vital heat to the bowels, the deficiency of which was the cause of the attack, but which no drugs or stimulants given internally could reach. Another case in this week's paper—the Rev. Professor Maurice, the eminent theologian, died in a few days of pleurisy. Here again the want of vital heat was the cause of the attack. The M.D.s could only blister, give purgatives and sedatives, under the idea of subduing the inflammation; but they subdued the life of the patient. Our 64, 141, &c. (see Inflammation), would to a certainty have cured him.

AS TO CHOLERA, the point to be aimed at is to restore the vital heat of the frame, and particularly of the viscera. Use Bath list No. 47, with a strong mustard plaster before and behind the trunk, also mustard plaster to soles of feet, and after three-quarters of an hour, unpack and have hot sponging all over, and put in similar pack again. Continue this for many hours till relief. After relief put on 220 before and behind, with 169½, and flannel over 220, and keep in bed. Or instead of above use 98, with strong mustard put in the bath, using plenty of covering while in, and feet in hot mustard and water. Water in bath deep enough to reach navel, when sat in. No stimulants on any account, nor medicine; only arrow-root till better.

TREATMENT FOR CHOLERA: SAFEST, SIMPLEST, AND MOST EFFECTUAL REMEDY.—Immediately the severe cramping pains of cholera are felt, have a sitting bath or tub filled with water hot as the person can bear to sit in it with feet out, put as much mustard in as can be borne; if mustard bran can be got, it is stronger, better, and cheaper; feet in hot mustard and water, a flannel pad five or six thicknesses about twenty inches square, dipped in the hot mustard and water, and laid over back of the bath, to rest the back of the person against; a similar one over front of person, and large one over knees, elbows well down in the bath, then plenty of blankets to cover the bath and the person, all but the head, a mackintosh sheet or mackintosh petticoat over blankets best to keep in the heat; a cloth partially squeezed out of cold water over head; keep the person in this bath till spasms give way, however long, and keep up the heat of the water by taking some water out and putting in more hot water, which can be done without the person getting out by introducing the water in a small stream from a can with a spout inside of bath. When cramp has quite subsided, then have a chair with a dry blanket spread over it; let the person sit in it, covered with the blanket, feet and legs in hot mustard and water, sponge over the person under the blanket with sponge or cloth squeezed out of hot water, then the patient stand up and put a thick cotton sheet or warm linen one over the person and rub dry; the object of this covering is to prevent the body from being chilled by being exposed to the air; then put the person in bed, with the same pads well wrung out of the hot water before and behind, and also towels or pads wrung out of the same, hot water to legs and well wrapped up, if with a mackintosh sheet under the blankets all the better; wrap tight round the body the blankets, pads, and mackintosh; if no mackintosh sheet, use a mackintosh coat or plenty of rugs. Should pain return, repeat the hot

sitting bath; many are lost for want of patience and perseverance until the attack is entirely removed; but if cramps do not return after the person is put to bed, then, after an hour or two, remove hot pads, and put on a hot bread poultice, in a bag, before and behind, about half an inch thick (a little chillies or cayenne pepper in poultice), well wrap up, and keep legs warm; keep in bed till quite convalescent; an upright position against recovery; keep in bed, and well wrap up with poultices two or three days, hot foot-bottle to feet all the time; take no liquid but toast and water, and for food a little cold meat, chicken and bread—no slops or watery food; brandy or any stimulants, or any drugs will only give momentary stimulus to the organs, and make them weaker after. Use great care for a week or two. Mackintosh, hot-water bag or hot can, or hot shelf of oven over poultice in bed, or afterwards, is very effectual.

TREATMENT FOR ARRESTING FEVER speedily, and which may be safely applied in all cases, delicate or otherwise. Keep in bed, apply 168¾, 220, 214 to legs and arms, 153½, 215, and in addition to 215 rest back of head on a sponge squeezed out of cold water, placing a piece of mackintosh or oiled silk on pillow; if no sponge, use a piece of flannel doubled up instead; then renew all these in cold water when they begin to feel warm, and when renewing them, sponge limbs and stomach with 70 degrees vinegar and water, and especially sponge under the armpits and about the thighs; also attend to 206. First treatment next morning 221 and 130, forenoon 131½ and 141; afternoon as morning treatment; bed-time, 13¾. The first part of the treatment to be continued till fever subdued; 152 whilst fever is on. Du Barry's Revalenta, half milk and half water, 1 oz. to a pint, flavoured with a little sugar or little salt, cooling drink, as receipt in this book. No medicine of any kind, and avoid flesh-meat until quite well. Fresh air essential, and good ventilation.

SOOTHING FEVER PACK.—Use two towels instead of the wet sheet, one below and the other above; after the patient has been in pack ten minutes, take the towels out, and have two other towels wrung out of cold water to replace them; wipe the body with wet cloth; go on replacing the towels every ten or fifteen minutes for one or two hours; sipping cold water during the time, then take a warm shallow bath, or tepid sponge over, 14 Bath list. This reduces fever rapidly. See 221 Bath list more particulars.

The above we apply in delicate cases, or where the patient is very low in vital power, allowing the towels to remain without replacing for one hour, and following with dripping sheet or shallow bath, 70 degrees.

TYPHUS FEVER is of altogether a different kind from scarlet fever, as it is owing to the impure state of the blood, and may be brought on at any time by bad air or diet and the inaction of the purifiers—the skin, liver, and kidneys, &c. It commences by giddiness, prostration of strength, drowsiness, moist, flabby tongue, with fetid breath, small and rapid pulse, intense heat, but not on the skin. Begin with the foment pack, 47. Remain in this pack three-quarters to one hour, then have a 14 or 19 Bath list, and then well dry with a dry sheet, not exposing the body to the air. When this is done, wrap the body in dry blankets while another pack is prepared, and repeat the same operation as above, with the same after-treatment. Dress after the two packs, and lie down on a sofa or bed. Repeat this whenever the fever heat returns, until the fever is subdued, gradually abating the number as the fever lessens. It is to be borne in mind that this fever very greatly reduces the strength; the blood and tissue are poisoned with impure matter which, unless drawn out, soon becomes putrid, and of course destroys life. If the bowels do not act with the pack and hot pads, use 48 and an enema of warm soap and water. Wear the wet body bandage night and day, changing every two hours, if not too fatiguing; but it is essential to renew and wash the wet bandage, as it will draw out much morbid matter; the sheets and blankets should be well washed also, and often aired. 163 or 168¾, 174 slightly sponged or sprinkled with cold water, in day

and 163 or 168¾, 220 sprinkled with chillies, and 169¼ over all, dry, in night. If diarrhœa comes on, then 236 only, dry, night and day.

The great object must be to raise the vitality in the nutritive nerves, and especially of the stomach and viscera, and if they can be healthily stimulated they will soon work off disease by making good material for the blood. The arms and legs should also be kept constantly packed when out of the above-mentioned pack; this is done by strips of calico wrung out of tepid water, wrapped round the limbs, and then mackintosh and flannel over, as described No. 214 in list. Renew these limb packings with the body bandage, having a fresh body bandage and fresh packings, that one set may be thoroughly cleansed of the fetid matter whilst using the other—not washing the limbs when changing the bandages, &c., as it would tire the patient too much, but wipe them with towel wrung out of tepid water.

These packs to the whole frame, and especially the fomenting pads, will stimulate the skin, the liver, and the kidneys to act in purifying the blood, and as soon as these organs can be got to work, nature will cure itself. Cold applications in the commencement of fevers, on reflection, will be seen to be injurious,—the system is deranged, the nervous vitality has lost its command over the functionary action, and any shocks by cold application cause too great reaction, which is only further drawing on the patient's strength. If the head is much affected, as it often is, a good-sized mustard poultice to the nape of the neck and top of the spine will be useful. Wipe this off dry, and renew it so as to keep up the redness. The throat, packed constantly, and bandages re-wetted and changed with the others. Continue this treatment until the fever is subdued, when great weakness will follow; then sponge the body over whenever the skin becomes hot and uncomfortable, not oftener, as not to draw further upon the strength by unnecessary fatigue. In this stage the water used may be 65 to 70 deg., washing the hands, arms, and feet with tepid water, or wiping them with cold wet wrung-out cloths frequently. During the height of the fever, the cooling drink, from receipt in this book, should be taken freely, with alternate sipping cold water. If the cooling drink causes any griping of the bowels, use water only. Drink whenever thirsty, as the water will be of great use in purifying the blood by promoting perspiration.

As to diet, during the height of the fever the less food the better, and only of a liquid nature, as arrow-root, sago, or gruel, no bread nor flesh meat, nor any solids. When the debility comes on from the fever abating, shown by the pulse, &c., then give frequent spoonfuls of arrow-root or sago made with a dessert-spoonful of brandy to the pint. Arrow-root with boiling water poured over it is better than boiling it, as it has a more astringent property. As the patient becomes stronger and has a more natural desire for food, and there is no return of fever consequent on giving stronger diet, some beef tea and dry toast may be given, and so gradually go on increasing the diet, to some finely cut-up lean meat, with bread-crumbs and a spoonful of beef tea over, but dry is best. No ale, wine, or spirits, except as above, but the usual diet as recommended in the early part of this book. Ale, wine, porter, or any rich food, or condiments, will derange the action of the liver and other viscera, and consequently the blood. The system must be nursed up with the plain, cool diet, fresh air and good water, and rest. Patients very soon rally by the use of these natural means of helping the diseased body to regain its healthy condition, and it must be obvious how much is gained by the system not having a great quantity of poisonous drugs to throw off, besides the morbid matter, and the advantage of not punishing the stomach and bowels with what is so foreign and disagreeable to them, and which they always expel as soon as they have power to do so,—but the organs do not come off harmless in the operation.

TYPHUS FEVER CASE.—A gentleman, about sixty-five years of age, in fair health, went to the May Meetings in London, got cold returning home to this locality. He had formerly had his life saved at our Institution from a severe attack of bronchitis and congestion of the liver, and wished for our help again; but, as often the case, relatives ignored our former successful treatment and sent for a doctor, who had no means whatever to restore circulation and the congestion of the liver but by drugs given internally, which, it must be obvious to any not in the medical profession, could only do mischief. After a fortnight, when his case was evidently becoming desperate, they sent for my head bathman, who at once administered our treatment, and gave immediate relief; but I fear the want of our active external warm application at first will be fatal to the case. Still, it is marvellous how we have snatched patients from the very jaws of death; and he may recover. Every application so far has given him comfort. One application of our 47 Bath list at first would have saved him from the fever. The youth and strength of the Prince of Wales carried him through the drug ordeal; but the Prince Consort sank under the utterly illogical internal treatment; and so did Lord Chesterfield, and numbers more. Yet the doctors to the Prince were knighted for curing him of typhoid fever! Why did they fail in so many others of the aristocracy since dead of the same disease? It is a fact, as the *Lancet* says, and as the *Times* says, the medical profession have no specific for the cure of any disease, and hence the total disagreement of doctors as to the treatment of any one form of disease. The medical organ suggests that several thousand pounds should be expended in ascertaining the specific effect of all kinds of drugs. A nice proposal for poor deluded humanity to have such a magazine of poisons tried upon them.

TYPHUS FEVER.

Matlock Bank, 16th January, 1872.

As to typhus or gastric fever running a course, nearly twenty years' experience has proved, with our simple treatment, to be a fallacy. Out of the great number of cases we have had, not one has died. They have been treated by bathmen, or bathwomen, at their homes, in various parts of Great Britain, and at our Free Hospital, Lea Mills. We do not take fever cases into our Hydropathic Establishment at Matlock Bank. Mr. Richards, of Bobber's Mill, near Nottingham, telegraphed to us on the January 4, 1872, to send a man to treat his son, aged 17, who had been in bed with typhus three weeks. Our man went over with pads, mustard, &c. He found the young man quite unconscious; the doctors had been unable to get any perspiration out during the attack. The man immediately gave him No. 47 in Bath list, and in fifteen minutes the patient perspired freely, and in half an hour more he was taken out of pack quite conscious and fever subdued. He was so low that our man frequently put his ear to his mouth to ascertain if he breathed. After the pack he was carefully sponged with a sponge squeezed out of warm soap and water, and put back to bed with bread poultice over stomach, sprinkled with chillies, with the body bandage 168¾ slightly sponged over it, a spongio bandage 169¼, or flannel 172 over all. The patient had rather a restless night; but refreshed by daylight, when he had a slight warm soap and water sponge over, and to bed again. In forenoon, 47 pack again, keeping the body bandages on constantly when out of the pack. Afternoon, fever pack 221; at night another sponge over with warm water; a better night. Third morning, warm water sponge over, and to bed again. Third afternoon, fever pack 221; at night warm soap and water sponge over. Fourth day, wash over in warm water, fever being quite subdued; only had a warm soap and water sponge over at night. This slight treatment was continued a few days longer when my man left him quite convalescent, except tender feet. Ordered warm meal and water foot bath. A more critical case could not be. The young man was reduced to a mere skeleton, and as low in vitality as possible to be alive. No

medicine or stimulants. Arrow-root, sago, and vermicelli pudding, beef tea, and milk; hungry, and was supplied with food carefully. Appetite excellent. No bread or solid food for five days, when he began to be very ravenous. Caution was necessary in giving food for another week, when he rapidly recovered his strength and health, and was free from all ailment and no drugs lodging in his frame.

The administration of sleeping draughts renders Nature powerless to rally. Our fomenting pack, No. 47 Bath list, at once restores the equilibrium of the circulation, and sets the pores of the skin free, which were closed in the Prince of Wales's case, by his riding fourteen miles in an open car, after a hard day's shooting on a cold November day; and, in the Prince Consort's case, returning from shooting in Windsor Park, and sitting down to luncheon without changing all his dress, and afterwards, with the cold upon him going to a review, and staying at a cold country railway-station—a 47 pack, or even a hot, dripping sheet, would have saved him.

We have the greatest possible gratification on reflecting that thousands of our fellow-creatures' lives have been saved by this treatment at our Establishment, Free Hospital, and various parts of Great Britain, and we have testimony to the success of this treatment on the Continent and in the Colonies.

We have not lost a case of typhoid fever out of the vast number we have treated at their own homes, or at our hospitals, when we have been called in before mortification has actually set in. We have began with such cases in a raving state, the 47 pack has stopped the delirium quickly. Exposure to cold when in a heated state will easily bring on typhus, without bad sewers. It is easily seen how it may occur. The pores of the skin in an ordinary-sized man should throw off two pounds of insensible perspiration every twenty-four hours; now what must be the effect, especially in men who had lived in luxury, as the Prince and his father, and Lord Chesterfield? This waste is kept in, the liver is partly paralysed from doing its work in purifying the blood, the kidneys also; and to remedy this a lot of doctors, every one with his own notions, founded on no scientific reasons, pour drugs into the stomach, and crown all, or rather seal the patient's fate, by giving opiates which stop vital action, besides purgatives to weaken and irritate the bowels; no application to the great depurative organ, the skin. The poor Prince Consort had not a shadow of a chance of life, nor Lord Chesterfield either, under the care of the highest medical talent in the kingdom; and if the young and previously robust Prince survives, it will be by the skin of his teeth. Had they been poor men, and left to Nature and some simple remedies of warmth and gruel, they might have recovered, as thousands do with typhoid fever. But woe to the poor frame when talents and degrees of F.R.C.S. and M.D. Cantab come in, and give poison a thousand times worse than sewerage effluvia. As to effluvia from sewers, it is bad enough and dangerous enough; but how do the scavengers stand it for a life? It is the drugs that kill; but the public will have faith in orthodoxy, though the result is death after death.

Twice when, after the outraged stomach had emptied its contents, the Prince was sensible for a short time; the scientific drugs soon made him collapse. The dry port wine, and chicken broth, and three glasses of Burton ale! The M.D.s were rejoiced to hear the Prince call for stimulants, and it was augured he would soon recover; but the drugs had sickened the stomach far too much to stand such aliment. Nature prompted the Prince to call for something to revive him.

AGUE.—The mild water treatment is eminently successful in curing and entirely eradicating this formidable complaint. Use 9 or $2\frac{1}{2}$, $13\frac{1}{4}$, 12, $12\frac{1}{2}$ after, on rising; the fomenting pack 47 and 39 pack, varied by a vapour bath, with 9 or 10; sponge down after it, and the use of the wet body bandage day and night, 233 night, 234 day, sprinked with warm water, 220 on stomach in night good to keep a good warmth. Hot soaping and sponge over at bed-time, once or twice a week. 98 good, the feet in hot mustard and water every night

at bed-time, and the body bandage would in most cases be sufficient, with care in diet, and abstinence from all stimulants and flesh-meat. The fomenting pack 47 one hour, or one hour and a quarter, will arrest the attack at once.

RELATION OF LOCOMOTION TO RESPIRATION.

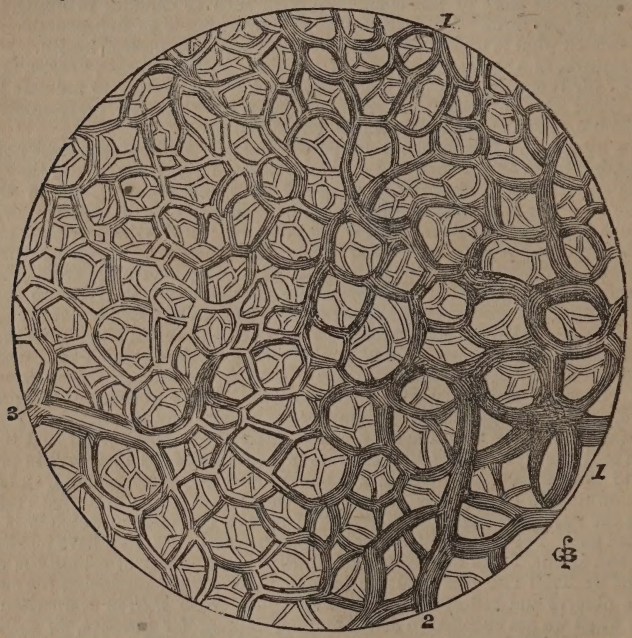
(*From Herald of Health.*)

THE term "health" is constantly used in a comparative, but seldom indeed in a positive or complete sense. Yet, according to our view, there is no such thing as tolerably or comparatively *good* health; every degree of departure or divergence from a full measure of health being a step or degree toward diseases, or with conditions more or less conflicting with such as conduce to health in any full and perfect form. We believe that full breathing is an indispensable condition toward what is understood by robust, vigorous, or perfect health. But we may remark, in a general way, that of the three grand elements, "earth, air, and water," *air* is equally or even more important and necessary to animate beings than either earth or water; or, more correctly, their adapted representatives to animal life, food and drink, or solid and liquid aliment.

In illustrating this principle we perceive that breathing takes place not only before, but often long before food or liquid, in any form, is taken into the system at the epoch of birth; in cases of supposed drowning, in fevers, and in diseases generally of the vital organs—illustrated conspicuously by diphtheria—air, pure and unadulterated in composition, is the first and most vital requisite beyond and before either food or even water in any form whatever. And when the term of mortal or organic existence is expiring, we again perceive the same principle exemplified in the fact that while breathing air was the first, it is also the last act performed in discharging the series of functions peculiar to animal nature. Furthermore, we believe that there are ample facts in the structure and functions of animals that have organs and powers of locomotion, which illustrate and establish the principle indicated in the title at the beginning of these remarks.

I remember seeing the statement from *Dr. Hall's Journal of Health*, so-called, some years ago, that by walking two miles per hour, persons—and I believe the same will apply to animals—consume *twice* the amount of air that they do when sitting or lying *still;* that the rate of consumption is increased in proportion to the rate of speed within limits of natural power to perform, and so on. But nowhere do I remember to have seen the natural reason of the facts referred to, or the natural elements that give the power or the form in which it is used, pointed out. Yet it is manifest this ought to be done. But as I have but limited time and means, I can only offer a few outline ideas by way of calling the attention of Dr. Trall and others to the importance of further discussing the subject. If we observe and reflect on our own sensations when *still*, in comparison with those when we are engaged in active motion, walking for instance, we shall perceive not only an increase of breathing and air, inhaled of course, but that this increase is in strict proportion and relation to the degree of our activity. If we walk fast, we breathe faster; if we run, we breathe faster in the degree that our motion is accelerated; when we stand or sit, the rate of breathing is rapidly diminished, in consequence of the impetus of locomotion being withdrawn or suspended. This is all apparently indisputable and correct, it may be said. And it is equally true that circulation of the blood, or its velocity of motion, is equally affected, *i.e.*, increased or retarded, according to the degree of exercise we indulge in, or as we refrain from it when in a condition of quiescence or stillness. The number of inspirations in either condition of stillness and moderate and rapid motion, indicate very clearly that the *amount* of air consumed or breathed is a very close relative proportion to the amount of motion or commotion performed. All this, I conceive, goes to establish the fact that air itself is the supporting source of the increase of motion, of circulation, and, as we readily see, of breathing. True, the will directs a more or less rapid contraction and motion

of muscle; but this direction would fail to be executed if the required increase of air were not simultaneously inhaled. Thus all motion and increase of motion depends upon a sufficiency of air to sustain it. If more motion is made, more air is consumed; if less motion, less air. When motion ceases, so does the inhalation of air, and even organic life itself. I have no intention of here discussing the physiological functions of air, but only of noticing circumstances which indicate and determine the quantity and proportion of air we consume, and its more obvious effects. Our power of motion and locomotion is immediately supported by, and in proportion to the extent or rate of breathing. If we



A minute portion of the human lung magnified fifty diameters, showing the capillary network formed by the ultimate ramifications of the pulmonary artery and veins. 1, 1. The arterial (*pure blood*) side of the figure. 2. A large branch of the pulmonary artery supplying the plexus with blood. 3. A venous (*exhausted blood*) trunk conveying the blood from the capillary plexus.—*Quain.*

breathe *no air* we make *no motion;* and the measure of our motion is identical with that of our consumption of air. Supposing the foregoing to be admitted, because correct, does it not follow that animal locomotion, or the power of locomotion, was ordained in the great chain of nature to both provide and control a sufficient degree of breathing by man, and in all the animal creation below him?

In the case of animals we perceive pneumonia, or "cattle disease," "hog cholera," "new horse disease," "epizootic amongst fine-woolled sheep," &c. &c., all certainly traceable to the most irrational practice of shutting said animals up, and thus depriving them of even a proximate degree of that natural measure of exercise, without which sufficient air to insure even a tolerable degree of

exemption from formidable disease is utterly impossible. Bright ideas of human duty to brutes, and conceptions of man's destiny, have these nature-defying and instinct-violating "high breeders," very. But not to enlarge on side illustrations, we find, in addition to what has been noticed, that locomotion is necessary to obtain food; that the condition of being "tired," or relaxation of the muscles from too long tension, usually does not ensue or exist till food enough has been secured. Also (and this is a most important point), that a relaxed, and soon resulting diseased—a permanently injured and weakened condition of the muscles results when voluntary exertion is desired, and therefore naturally required, but by any means or from any cause long denied or prevented. Whether insufficient exercise result from disease, from indolence, from the nature of occupations—alas! for the tens of thousands in this category—or from whatever cause, the effect will be nearly the same generally: a languid circulation, impure blood, relaxed muscles in general, and equally reduced strength and increase of languor, all conditions of disease. However little locomotion may be engaged in where

The windpipe, one lung, and the bronchial tubes shown on the right, the substance of the lungs cut away; a is the top of the windpipe. It is estimated that the surface of the bronchial tubes and air-cells in the lungs cover a space of thirty thousand square inches, underneath which the blood circulates, and to this space the air comes to oxygenise the blood.

the air is cool and pure, all these conditions are at once sensibly modified, and the individual feels measurably relieved and invigorated.

My conclusion from such, amongst many other facts, is that the organs and power of locomotion are not given to men and animals for mere purposes of securing food in one place when it may fail in another; for the sake of changing scene to gratify the higher sense; nor for any or all similar purposes alone: but that locomotive power in both man and animals is provided to admit of, secure, and control, a full and necessary supply of air for the active play of all the functions; to keep and maintain them in vigorous health, equally as much and as necessary as for those other uses. This seems to be established by the fact that every diminution of natural exercise or of breathing results in a proportionate reduction of vigour and health; as well as because, on the other hand, the fullest measure of health, vigour and strength, mental, consequent on physical, are ever found in connection with the fullest practicable extent of bodily locomotion. For myself, therefore, I must believe that the power of locomotion is not only the cause of a sufficiency of air being breathed to keep the physical system in vigorous health, but the degree of exertion we are at any time capable of making is at the same time the measure and gauge of the quantity of air required for our fullest health; and that our ability to take exercise, whether the weather be fair or foul, is the only natural or proper limit to the consumption of fresh air that a full measure of health inevitably demands and enjoys.

The following is from Dr. Smith:—"No one is able by a voluntary effort to

expel the whole contents of the lungs. Observation and experiment lead to the conclusion that the lungs, when moderately distended, contain at a medium about twelve pints of air. As one pint is inhaled at an ordinary inspiration, and somewhat less than the same volume is expelled at an ordinary expiration, there remain present in the lungs, at a minimum, eleven pints of air. There is one act of respiration to four pulsations of the heart; and, as in the ordinary state of health there are seventy-two pulsations, so there are eighteen respirations in a minute, or 25,920 in the twenty-four hours. About two ounces of blood are received by the heart at each dilatation of the auricles; about the same quantity is expelled from it at each contraction of its ventricles; consequently, as the heart dilates and contracts seventy-two times in a minute, it sends thus often to the lungs, there to be acted upon by the air, two ounces of blood. It is estimated by Haller that 10,527 grains of blood occupy the same space as 10,000 grains of water; so that if one cubic inch of water weighs 253 grains, the same bulk of blood will weigh 266⅔ grains. It is ordinarily estimated that on an average one circuit of the blood is performed in 150 seconds; but it is shown that the quantity of air always present in the lungs contains precisely a sufficient quantity of oxygen to oxygenate the blood, while flowing at the ordinary rate of seventy-two contractions of the heart per minute, for the exact space of 160 seconds. It is therefore highly probable that this interval of time, 160 seconds, is the exact period in which the blood performs one circuit, and not 150 seconds, as former observations had assigned. If this be so, then 540 circuits are performed in the twenty-four hours; that is, there are three complete circulations of the blood through the body in every eight minutes of time. But it has been shown that the weight of the blood is to that of water as 1·0527 is to unity, and that, consequently, 10,527 grains of blood are in volume the same as 10,000 grains of water. From this it results that if in the human adult two ounces of blood are propelled into the lungs at each contraction of the heart, that is, seventy-two times in a minute, there are in the whole body precisely 384 ounces, or twenty-four pounds avoirdupois, which measure 692·0657 cubic inches, or within one cubic inch of twenty imperial pints, which measure 693·1847 cubic inches. By an elaborate series of calculations from these data Mr. Finlaison has deduced the following general results:—1. As there are four pulsations to one respiration, there are eight ounces of blood, measuring 14·418 cubic inches, presented to 10·5843 grains of air, measuring 34·24105 cubic inches. 2. The whole contents of the lungs is equal to a volume of very nearly 411 cubic inches full of air, weighing 127 grains, of which 29·18132 grains are oxygen. 3. In the space of five-sixth parts of one second of time, two ounces or 960 grains weight of blood, measuring 3⅜ or 3·60451 cubic inches are presented for aëration. 4. Therefore the air contained in the lungs is 114 times the bulk of the blood presented, while the weight of the blood so presented is 7½ times as great as the weight of the air contained. 5. In one minute of time the fresh air inspired amounts to 616½ cubic inches, or, as nearly as may be, eighteen pints, weighing 190½ grains. 6. In one hour the quantity inspired amounts to 1,066⅝ pints, or 2 hogsheads, 20 gallons, and 10⅝ pints, weighing 23¾ ounces and 31 grains. 7. In one day it amounts to 57 hogsheads, 1 gallon, and 7¼ pints, weighing 571½ ounces and 25 grains. 8. To this volume of air there are presented for aëration in one minute of time 144 ounces of blood, in volume 259½ cubic inches, which is within 18 cubic inches of an imperial gallon. 9. In one hour 540 pounds avoirdupois, measuring 449¼ pints, or 1 hogshead and 1¼ pints. And, 10. In the twenty-four hours, in weight 12,960 pounds; in bulk, 10,782½ pints—that is, 24 hogsheads and 4 gallons. 11. Thus, in round numbers, there flow to the human lungs every minute nearly 18 pints of air (besides the 12 pints constantly in the air vesicles) and nearly 8 pints of blood; but in the space of twenty-four hours, upwards of 57 hogsheads of air and 24 hogsheads of blood."

HEIGHTS OF ABRAHAM, MATLOCK.

WHAT IS THE NATURE OF INFLAMMATION?

TEN thousands of human beings have been destroyed, and are now being destroyed every day, from a false idea of what inflammation really is. There is nothing red in the body but arterial, or, in plainer language, nutritive, blood; secondly, there is nothing gives heat to the frame but arterial blood, which is taken as a rule at ninety-eight degrees, Fahrenheit scale; thirdly, the walls of the veins, as also the whole body, are permeated in every part by nerves of sensation, commonly termed sympathetic nerves. Now, when from some impediment of congestion in the circulation, or, more commonly, from want of power of the heart to propel the life-giving stream through the body, there is an accumulation of this naturally hot blood at some part, what certain consequences must naturally follow? Unnatural redness of the part, from an excess of red blood at the part; excess of heat, from an excess of the naturally hot arterial blood arrested in the part; next, the gorged veins press upon the sympathetic nerves telegraphing sensation of pain to the brain. Hence, we have the redness of inflammation accounted for—the pain, the unnatural heat of the part, and the swelling. As to the redness and pain of inflammation being caused by virus in the blood, that will not bear investigation a moment. Analysis both of the arterial and venous blood can be made in a healthy state, and in every stage of morbid disease; and the constituents can always be correctly known before the analysis. Where is the mysterious fire or virus, supposed to be so dangerous to life? No science has ever discovered it, nor accounted for it, simply because the theory is groundless; but to this groundless theory holocausts of human beings are sacrificed, or the foundation of a miserable existence laid, to be with certainty cut short of its natural term. When there is inflammation in any part, we, by our fomentations, mustard plasters, poultices, spongio bandages, &c. &c., and total abstinence from

all stimulants, medicine, or animal food, quickly get over the obstruction, and there is an end of the disease. I could give hundreds of cases successfully and quickly cured by our assisting nature to overcome the obstructions; on the contrary, we see and hear of friends and others dropping off around us by this senseless old practice of weakening prostrate nature by way of curing. A striking illustration of the effects of a lowered vitality, producing what is termed inflammation, has just occurred to a neighbour, a lady approaching sixty years of age, and not robust. She visited her son, who resides about half a mile from her own residence, across the common, an exposed and bleak road in winter. She, as usual, walked home at night from her son's warm drawing-room; the night air rather cold, and the frame rather tired, and so the natural consequences followed: she inspired the cold night air, to expire it heated; and so, from want of a store of vital heat, by the time she arrived at home and got to bed, the heart was unable to overcome the obstruction caused by cold, pleurisy came on, the heart could not propel the blood through the pleura containing the lungs, agonising pain followed, and all but inability to use the lungs. Fortunately, she had our fomenting pads, mustard, and stomach hot-water can. These were immediately and persistently applied, till heat and nervous power had been imparted, and the attack overcome; then our spongio bandages were applied, and No. 231 Bath list. The usual orthodox plan of leeches, blisters, and calomel would, with the greatest certainty, have extinguished life. Another case of an intimate friend, about sixty years of age, rather stout: was suddenly threatened with inflammation of the liver. Severe pain came on, with shivering of the whole frame, cold perspiration, and yellowness of the complexion. The same simple natural means of removing obstruction in the circulation, and giving what was wanted—more vital heat—quickly restored him, and this very day, so shortly after this dangerous attack, he told me he never felt better in his life. What would have been the case with medical treatment? certainly prostration, if life had been spared. Another friend, same age, and with exactly similar attack, called in an M.D. and surgeon. At once they dosed him, leeched him, blistered and cupped, until the heart had not power to circulate the blood through the tissues of the brain: the result was apoplexy and death.

THEORY OF INFLAMMATION.—I have read many of the treatises written on this subject, but find a good deal of diversity of opinion amongst eminent writers. Veins, by the profession, are thus designated from their conveying the exhausted blood to be renewed. Arteries are also veins, but they convey the oxygenised nutritive blood from the lungs, by the left ventricles of the heart, to every part of the body for its support. Thus non-medical readers are sometimes puzzled by the terms veins and arteries, which are, in fact, identical in form, but have different offices: both, as will be seen by the engravings, act by muscular contraction and expansion, and so force the blood forward. The veins (see cut) are provided with muscular bands and with a membrane stretching across the vein internally. This membrane is larger than the exact diameter of the vein, and is pierced with an orifice in the centre. The blood is propelled through this orifice; but to stop its return, the back pressure closes the orifice and prevents a backward course, as shown in the engraving.

When the muscular power of the arteries or veins is reduced by various causes, such as severe cold, drinking ardent spirits, simple weakness, violent contusions, the nervous power is lowered (for it must always be borne in mind that this nervous power or electricity, of which I have spoken so much, is the moving and primary cause of all circulation in the body), the arteries and veins cannot perform their office, and are unable to propel the blood freely on its ocurse, at some particular part, either internally or externally; here, then, is

the cause of congestion and inflammation. The blood does not get forward to be purified and renewed by the lungs, the liver, the kidneys, the glands, the skin, &c., and hence rapidly becomes of a corrupt character; and unless the obstruction is soon removed, it becomes actually morbid, poisoning the whole system; decomposition sets in, mortifying and destroying the whole frame, and death ensues.

The primary cause of inflammation of any part being the lowered vitality of the organic nerves, it follows that every care should be taken not to further lower their power, but to raise their vitality, and this our fomentations and bandages does effectually, quickly, and safely, by drawing blood to the surface of the body and relieving the interior vessels and quickening the circulation of the parts affected. When the inflammation is subdued, the patient quickly rallies, and is soon well. The obstruction is removed, the blood moves freely through the veins, the stomach immediately participates in the relief, and calls urgently for food to repair the exhausted frame. Food should be given only moderately and frequent in these cases, and avoid all stimulants, and no animal food. I have had severe cases entirely cured in six to twelve hours. It is very striking to witness the rapid exhaustion of the whole body by inflammation of any vital part; this, however, is easily accounted for when the nature of the organic nerves is considered, as the lowering of their vitality in any part effects the whole until dissolution takes place, when this goes on. The difference in principle of treatment betwixt our methods and that of lowering the vital power of the body, which is done by medical men in the very first steps, is easily seen. They lower the vitality of the body to subdue inflammation, and kill the patients, or lay the foundation of fresh inflammation, dropsy, &c.; our external method raises the vitality and cures with ease, safety, and certainty.

I have had a great number of cases of severe acute inflammation; (for acute and chronic inflammation must not be taken for the same thing; acute inflammation is the first stage); and this of which I am treating is most dangerous to present existence. When the first attack has subsided, a slow, low inflammation may still exist, but not be imminently dangerous to life; this is called chronic. Our mode of treatment in these cases commences by first taking into account the lowered vitality of the nerves of nutrition. In the first stages of acute inflammation, and while the pain is severe, hot fomentations, as hot as can possibly be borne, with our hot pads and fomenting can, where they can be applied, laying the patient in bed, keeping as quiet as possible, and sipping water not quite cold. Our plan of fomentation has a vast advantage over the ordinary method, as the pad and can will keep hot so long, and the patient is not disturbed, nor the parts affected exposed to the air, by requiring frequent changes of the pad. When not fomenting, apply Bath list 220, with chillies added.

One very striking instance of the efficacy of our treatment was a case a gentleman, aged 50, had experienced great hardships in a hot climate, came to us emaciated and weak with chronic skin disease, and congestion of the lungs formerly, which had been subdued by blisters, leeches, &c., but of course left the chest weak. During the time he was with us recovering from the skin disease, he recklessly exposed himself in a draught one cold night, and went to bed shivering, which increased to violent pain so that he could not call out for help, but putting up the bedroom signal the watchman was quickly with him, and sent for a bathman, who overcame the congestion of the lungs and pain in one hour, and without relapse; the next day he told me it was miraculous what the hot foment pads and mustard had so quickly and efficiently and effectually done, leaving no injurious effects from medical treatment. He got quite well, both in lungs and of the skin disease, and had no return of either.

FIRST IN CASE OF INFLAMMATION OF LUNGS, LIVER, OR

BOWELS, OR KIDNEYS, spread a mackintosh sheet or mackintosh capes on the bed, then a double blanket, then two flannel pads 21in. square, six thicknesses, or a piece of blanket well squeezed out of as hot mustard and water as possible. Lay one pad on blanket, patient undress and lay down on pad; put another hot pad in front, and wring out flannels out of hot mustard and water, and wrap round legs and feet; hot brick or foot-bottle to feet; wrap up the body and legs well, first in blankets over pads, then mackintosh sheet or capes over all, a feather-bed over all useful if not oppressive; renew this hot fomentation as often as the pads lose their heat; sip tepid toast and water or barley water; put legs in hot mustard leg-bath while pack is getting ready; and hot stomach-can to part affected. In severe cases we have gone on fomenting for hours before pain gone, but by persevering have in every case succeeded in curing. See also Bath list 225. When all pain gone put on Bath list 168¾ or 163, with 220 before and behind, sprinkled with chillies, then recline, covered up as 76 or 77 Bath list; and as the patient recovers, wear 178, 186, 169¼ slightly damp; 13½ or 13¾ useful; as to diet, no animal food or stimulants, simple light food until convalescent; should pain return, repeat the treatment. Inflammation always leaves great prostration, but it is highly dangerous to give stimulants or strong diet to get up strength. Nature must be raised gradually, and then perfect health will be the result. An enema of warm soap and water useful. If diarrhœa comes on, see Bath list 67.

Tobacco, and Fever and Inflammation.—We have had some striking instances of the injurious effects of tobacco in rendering persons liable to disease. Some cases of scarlet fever have occurred in the locality of Lea and Bonsall recently. The tobacco-smokers have had the greatest difficulty in getting over the attack; their lowered vitality has told upon them, and the mucous inflammatory action which is always more or less present in smokers, as seen by the swollen and unclean state of the tongue, has determined such an amount of inflammation to the throat, that their lives have been saved only by the most constant and unremitting attention to fomenting and packing. Cases, which have been free from tobacco, have got through the fever with very little trouble, and have been quite well in three weeks. Tobacco-smokers are little aware, at the time they are using the narcotic, how they are paying for the gratification by accumulating the seeds of disease and death in their frames. While I am writing this, a case of fever, and one of inflammation of the bowels, have sent to us for help; in both cases the chances of recovery are slight, from being smokers. We always undertake cases of tobacco-smokers with reluctance and doubt as to recovery, whether in fever, inflammation, or rheumatism. A patient arrived at my establishment yesterday; full-formed man; age, 30. He began to describe his pains; stomach affection, and general uneasy state. I said at once, "You smoke tobacco." He was surprised I could predict his state from that cause; but so it is. Tobacco gives young men the infirmities of age; and the old, the miseries of a constant craving to keep down the miserable feelings which have been created by the drug. A little reflection, by any Christian person, must show them the heinous sin in thus destroying or disabling the body from properly fulfilling the duties of life, for sensual gratification. Some ruin their health also with snuff, and some with alcohol; all such courses are an offence against God's laws. Poor, weak human nature! it is hard to give up habits. Many a young man, and older too, have been initiated into these habits by careless fathers, who have little thought how they were undermining the health and happiness of their offspring by setting them the example. Youths see their fathers smoke and take their glass of grog; they think it is manly and safe to follow their parent's example; and, by getting over the nausea and natural distaste of tobacco and spirits, they become confirmed slaves to the ruinous habit.

Precautionary Measures to ward off consumption and other diseases should be taken early, when self-denial and exertion would prevent years of misery, often ending in premature death.

I am sometimes asked how it happens that persons get into a bad state of

health whose habits have been strictly correct, and who have never indulged their palate at the expense of the stomach? I reply, it is easily accounted for. The body is in a constant state of waste and reparation. Active exercise in the open air is a condition of healthy existence; and just so far as mankind can enjoy this, is their prospect of having a healthy body. By every voluntary action the cellular tissue is displaced, and a call made for new matter to replace the waste. By every active inspiration the pure air is forced into the minute air-vessels in the lungs with a power of 4 cwt.; where it gives to the blood the life-giving oxygen which consumes the carbon or waste matter. By a sedentary life, or a bad atmosphere, the old worn-out matter is not removed; the carbon in the blood is not consumed, for want of the oxygen in fresh air. The nervous system soon feels the effects of this unnatural state; and hence comes dyspepsia, and the long train of evils caused by having worn-out matter in the frame, instead of living tissues. Sometimes this enfeebled state goes on until the frame becomes a wreck, or some weak vital part gives way, and the body dies by inflammation or fever, &c. We find moderate movements of great service in most cases, and especially in weakness of the chest; even a delicate person may exercise the chest and arms to great advantage by sitting in a chair, clenching the fists, working the arms and shoulders gently, and at the same time expanding the chest, with the head thrown back, opening the mouth and breathing freely, moving the trunk backwards and forwards. An immediate warm sensation will generally be felt in the muscles of the chest.

The amount of exercise should be regulated by the strength of the person; over-fatigue will bring on excitement and mischief. Dumb-bells or gymnastics in such cases very injurious. Exercise should be frequently practised for a few minutes at a time, and habitually expand the chest. 71, 72 Bath list. This would prevent consumption in many cases. It is melancholy to see such numbers of comparatively young persons, and especially females, with chest affections brought on by inattention to the natural laws of health—sedentary habits, warm rooms, stimulating food and liquids, undue brain excitement from study before the frame is fully developed, late hours, and in many cases by over-anxiety to realise a necessary maintenance.

Then, again, little attention is paid to the requirements of the body in clothing; fashion or custom is more thought of than the physiological structure and functions of the body. With very few exceptions, all the patients who come to my Hydropathic Establishment in autumn, winter, and spring are very inconsistently clothed. No treatment will cure invalids, or enable them to resist cold, without proper clothing in this climate. The chest is very generally the most exposed part of the body, except the head and hands; and it should be the most protected, as well as the stomach, liver, and bowels; for if the vital warmth of those parts is lowered, their functionary power of action will be just so much lessened. I believe one of the principal causes of disease with those who lead sedentary lives, or are exposed to the weather, is the little care that is paid to keeping the trunk of the body well protected, and the vital heat retained in it; and the little or mostly no attention paid to exercising the body. Exercise, as I have before remarked, may be had without either a large space or long walks. Thousands, and especially ladies, never exercise their limbs, only by slowly walking from one room to another, or when in the open air never exert their physical powers to bring good healthy circulation; and as the Creator has made the exercise of all the muscles of the frame a condition of health, and man cannot alter or abrogate those laws, they must either be obeyed, or the consequences of acting independently of them must be experienced.

A case of this kind, where these laws have not been acted upon, has consulted me by a letter, this morning, stating he is occupied in a wholesale warehouse, in a close part of the city, from 8.30 a.m. to 8 p.m., with only one hour during that time for meals and rest, gas-lights burning often all day in winter. The conse-

quence is that a chest complaint has been established that will probably soon render him unable to continue his employment; he will be recommended to country air, and go there to die, leaving a wife and family to struggle on in life, surrounded with difficulties which are very likely to bring them to the same melancholy state. The answer is, we must attend to business or starve. There is no reason in such an observation; men should be content with any employment and remuneration, rather than place themselves in such positions,—contracting ties and engagements that they are eventually unable to fulfil, and by the attempt multiply misery and disease. How often when success in business crowns their efforts, they find they have sacrificed what money cannot purchase, and by no efforts can regain the health they have lost, or ability to enjoy life. They then often envy the very outdoor labourer; but when the mischief is done, regrets are useless, and often a settled melancholy rests upon the mind, further depressing, and hastening the climax.

The more experience we have in cases of diseases of the lungs, and less hope we have of curing many of such diseases; for generally they are cases such as I have just described, who come for a short time to be patched up, and return to the same course of life, still hoping, against reason, that they can yet go on with a little more care, when in fact only an entire abandonment of their business and locality can be of any permanent use to them. Females are also, either by their occupations, or previously contracted sedentary habits, or from family duties, in the same position; and all we can do is to give them instructions how to ward off attacks and improve their health in a degree, and in this our mild Hydropathic plans, and instruction in clothing, diet, and habits, are eminently successful. We have had many successful cures in females, where affection of the lungs has come on from excess or stoppage of periodical discharge, and when our sitz baths, &c., have regulated the constitution, health has been regained; in other cases, both male and female, after a course of our treatment, have changed their occupations or residence, and adopted our other instructions, and have been permanently restored to sound health. Darlow & Co. sell these very effective (see advertisement at end of the book); also Maw's respirators.

CONSUMPTIVE PERSONS may use the water treatment with advantage, but it must be very cautiously applied, and not with cold water, say seventy-five to eighty degrees. To give a general idea of our plan of treatment, see letter H, Special Treatment, which, of course, has to be varied according to the age and nature of the case. (See Bath list, 14, 23, 26, 68, 71, 72, 74; chest compresses, according to vitality of patient, Nos. 179, 180, 182, 196, 197, 198, 207, 208, 212, 213.) Keeping the body covered as much as possible during the operations with a blanket, and dress entirely and quickly. It is important not to expose the body to the air while undressed, as it rapidly loses heat, and in persons of weak habit is injurious. The ordinary plan of sponging the body with cold water by delicate persons is very injurious. Wear a dry chest compress and spinal night and day. See Bath list, 177, 178, 186. Light hosiery vest for summer, good lamb's-wool for winter, and lamb's-wool stockings winter and summer. Ripe grapes good, and also stewed prunes or pears; no kind of stimulants or coffee. The clothes to fit up to the throat, especially in winter, and sleeves to protect the armpits. If the bowels are not regular, see Index, Constipation. Some consumptive patients cannot bear much treatment, and then feelings and symptoms must dictate.

RUBBING THE CHEST with hand and cold water, and wearing flannel chest compress, will strengthen the chest, the rubbing twice a-day; summer dress should be changed at the end of August. (See Bath list for compresses, 177, 179, 180, 186. See treatment Incipient Consumption.)

CONSUMPTION, DISEASE OF THE LUNGS.—This never takes place except there is first what is commonly called a bad stomach, or bad digestion. The lungs are intersected by thousands of minute air tubes, the interior surface of which is calculated at 30,000 square inches. These tubes are also lined with minute air-vessels, which make the body of the lungs almost a mass of these pipes and air-vessels. Now it will easily be understood that where so much delicate machinery is at work, and of so fine a structure, the materials must be good and refined to renew this structure; which is every day wasting and being replaced by new formation, as in every other part of the body. Persons of weak digestion, or from poor or insufficient food, make of course impure blood. Out of this poor blood the fine structure of the lungs has to be renewed; nature applies it, tries it, and finds it unfit for the purpose, and then tries to expel this morbid useless matter from the lungs by forming tubercles and abscesses, and so throwing it off, which ultimately destroys those life-giving organs. The formation of abscesses and tubercles is an effort of nature to throw off disease; and in thousands of cases a cure is effected by them. The parts of the lungs where these operations of nature have taken place are by them destroyed, but a cicatrix is formed where the disease has been; and which makes good the damage by cutting short the tubes around the seat of tubercle and abscess; but by this process the extent of the tubes and capacity of taking in air is diminished; and such subjects in whom this has taken place will not have the power of lungs they had previously; nevertheless, thousands go through life with good health and live to an old age, who have thus had their lungs seriously diseased. Out of 150 bodies dissected in the Hospital at Paris, 125 showed that disease of the lungs had existed, were cured, and the persons had died from other causes.

It is true many suffer from indigestion who escape disease of the lungs. Indigestion brings on chronic inflammation of the mucous lining of the stomach, bowels, and liver; this the system tries to throw off on to the non-vital parts of the body, as before noticed, in the form of boils, rash, shingles, abscess; and many have been saved from death by a broken limb drawing the inflammatory action from the more vital parts. But when the system is no longer able to throw off this inflammatory matter outwardly on the body and limbs, the weakest vital organs then give way; and the inflammatory action concentrates on the weakest parts, and serious disease sets in. Any who inherit constitutionally weak lungs are, of course, the most liable to consumption. Poor food, confinement in badly-ventilated places, over-work, &c., bring on indigestion, fever, then cough; and by the red tongue showing the mucous inflammation is extending to the air tubes. In the present state of medical knowledge and practice a fatal crisis is very often accelerated by the application of blisters, and preparation of cantharides, and as counter-irritants applied to the surface of the chest, which are taken up by the absorbents and carried into the blood, and to the already irritated and inflamed lungs; besides draining away vitality when the blister "*rises.*" Good nourishing living is prescribed often without directions as to what is proper. Flesh-meat, and not unfrequently porter, ale, or wine, which only increase the inflammatory action, are often ordered. Actual disease once set in in cases of naturally weak lungs, is never indeed removed by the unnatural methods adopted for cure.

Whenever the tongue is red and swollen, white or furred, persons with weak lungs should immediately take precautions before disease commences; and the only precautions they can take, to be of use, is not physic, blisters, &c., but farinaceous and vegetable diet, good air, rest and mild applications of water treatment. When cough and expectoration have set in, the disease has commenced; but generally in such a form that with care and attention recovery may be expected.

But if, in this stage, the lungs are exposed to severe cold, or to the influence of stimulating food or liquids, fuel is being supplied to the fire; and the vis vitæ, or power of life, is fairly, or rather unfairly, beaten down. In taking in the air each time we breathe, an average power equal to a pressure of four cwt. is exercised, and in discharging it to that of three cwt. Now when the air tubes are inflamed, the effect of cold air—which is so much heavier than warm air—to the lungs may be supposed; and when we consider that the lungs cannot for one minute be at rest while life lasts, it is only a matter of astonishment their destruction is not far more rapid than we see to be the case.

CHRONIC PULMONARY CONSUMPTION.—When this has taken place, and the body of the lungs are suppurating, or tubercles forming, we use simply the half-chest spongio and spinal compress, as above; soaping the body over every morning with warm soap and water, and then giving a tepid wash down, standing in warm water. But if the disease is advanced, then, without rising out of bed, the upper half of the body is wiped over with a towel perfectly wrung out of tepid water; then, covering the upper part, have the same application to the lower part; 13½ or 13¾ is very necessary where there is perspiration. We have had some apparently hopeless cases of consumption which have entirely recovered; and in all cases our treatment will give relief and prolong life. Consumption takes place from various causes, and the remedies must be applied accordingly. Very frequently it is produced by a single exposure to cold, or going from a heated place to cold, or sitting in draughts, or keeping wet clothes on; and if the lungs are at all weak, inflammation of the body of the lungs takes place at once without bronchial affection, generally even without any cough. The darting pains are felt in the chest, and soon it is difficult to breathe.

In all these cases of sudden attacks of inflammation, our mild water treatment does wonders in a very short time. The fomenting can, with fomenting pad, should be immediately applied for half an hour as hot as can be borne: then towel-pack, with towels wrung out of warm water, lying in pack three-quarters of an hour; and then 26½, Bath list; also, 168¾, 174, 172. If the pain still continue, repeat the fomentation and pack until the pain is subdued; then put on full-sized spongio chest compress damped with hot water, and keep it on for a few days, or a week, until the attack has subsided. The half-chest spongio will then be sufficient; and this should be continued for several weeks, night and day, damping it morning and evening. If spongio is not at hand, chest compress of calico, with flannel enough to keep in the warmth. After the first attack has subsided, in the morning have a warm soaping over, and wipe the upper part of the body with towel partially wrung out of tepid water; keep in bed, and as quiet as possible for several days. If the pain returns, resort to the towel pack or fomentation. After a few days, if there is no pain on breathing, have a warm soaping on rising, and tepid sponging No. 14, standing in hot water; putting on damp chest and spinal compresses, and still keeping quiet. On going to bed, have feet in 105 degrees mustard and water three minutes, then wipe the feet with a damp cold cloth; and put on a pair of cotton socks, having the soles of the socks wrung out of tepid water, and a pair of dry lamb's-wool over them. Avoid flesh-meat and all stimulants, and coffee or condiments. Avoid milk as a beverage at first, it is too heavy; for the first few days a very small quantity of food is best, such as revalenta or sago. As the person recovers, a No. 9 or 14, standing on a hot pad, or in hot water, with a hot pad to the chest, or a dry one while having the dripping sheet, may be applied on rising. If perspiration in night, 13½ or 13¾, or on going to bed. Great caution, however, must be used in not stimulating the circulation too much, either by hot or cold application, until the circulation is restored. When the inflammation is on, the hotter the fomentation the better, but not so when the pain is subdued, as it would weaken

and irritate. The respirator is necessary to be used in going out into the cold or damp until convalescent, and if the bedroom is cold, during night also. The great points to attend to in the first stage are to consider the delicate structure that is in a state of inflammation, and when that is subdued, the very weakened state of the parts that will not bear the changes they can sustain when in health : neglect of these points is running great risk.

TREATMENT FOR HEMORRHAGE FROM THE LUNGS.—This disease is known when the blood vomited is of a bright red colour. As soon as possible, lay the patient on the bed or couch, on the back, with the head high, and place No. 153½ to feet; wet cloths to head, and then squeeze out a towel out of cold water, double it in four, and lay it on bare chest, and also about throat; then lay some dry flannel over towel, and keep renewing the towel out of cold water as often as it feels warm; 143 or 141 would also be useful at same time. The patient should drink frequently of cooling drink (see Index), but make it *doubly* strong of acid; keep very quiet. After the above treatment has abated the bleeding, then put on 181, squeezing the calico part out of cold vinegar and water, and renew the calico with cold water whenever warm. Very light diet, and all cold. Next day give 48 and 106, and then continue for a while, as general treatment, the directions given as letter H, Special Treatment (see Index), till strength is regained.

SWEATING AT NIGHTS.—Before going to bed have a sponge over with sponge slightly squeezed out of vinegar and water, and same on rising; and if chest affected and difficulty in breathing also chest pack all night. No. 226 Bath list, also 13½, 13¾.

The following case will also be applicable to females :—

CASE Z.—Gentleman, aged 28; rather long-standing affection of the lungs; a good deal reduced, with much expectoration. On rising, 71, and then put on 180 dry on chest, and only damp it over stomach; then 114 in bed (13 and 14 once a week; breakfast in bed). Forenoon, 141, with hot brick, in cloth, to feet. Afternoon, 71, 158, whilst lying in 77; when any pain in chest, have 23, 195, 179 behind, and 207.

Case No. 5.—Age 35; for several years liver affection, then of the right lung, and general wasting. He gave up business, came to my Establishment, and is progressing well, and gaining weight, under the following treatment, varied according to symptoms:—First morning, 71 and 14, feet on hot pad covered with blankets while having 71; second morning, 71 and 14; third, same: first forenoon, 70, 71, 107; second, 45, 71; third, 49, 71, 107; afternoon, 156, 181, 168, 207, 168¾, 174, 178, 186.

Case No. 7.—A gentleman, age 26, been in hot climate, chest and lungs affected, and much wasted. The following treatment, varied according to circumstances, enabled him to resume his duties. Morning, 71, 25; forenoon, first day, 81; second, 72, 74; third, same; afternoon, 115½, 179, 172; 208, 207, 212; got to No. 14 and No. 15 after a fortnight.

CONSUMPTIVE CASE.—An acquaintance of my wife brought her niece this week in an advanced state of disease of the lungs. She was well aware of my wife's treatment, but preferred putting her niece under the M.D.'s hands, who, as usual, blistered over the region of the left lung, which was diseased; used iodine, belladonna, and gave medicine to the certain destruction of this young woman, and the doctor knew perfectly well what the consequence would be from his many years of experience of such cases. I knew perfectly well a diseased lung was never cured by such practice, but the end of life accelerated.

I was one day in the Castle while the interior was being constructed, when I saw a gentleman and lady looking over the place. The gentleman came to me and said I had probably forgotten him, and replying I had, he said many years ago he was a mechanic in one of the largest engineering works in Manchester,

pronounced in a consumption by an M.D., and recommended to his native air, Matlock. His uncle, Job Walker, Starkholme, brought him to me. I took him into our free hospital, where he recovered, returning to his employment. His employers sent him to India with some machinery, where he became foreman, and had an offer of partnership in an essential oil company, with charge of the machinery, and by that has made an independency. Another nephew's life was saved at our free hospital. I could give many hundreds of cases where health has not only been restored, but, as in this case, been the means of the patient realising a fortune.

(*Case.*)

"I am a medical student of the third year. I have perused with great interest and profit your work on the water cure. I have been much charmed with your exposition of the laws of health, together with the rationale of disease. My principal object in writing to you is to ask your advice in relation to myself. For a period of seven years I have been greatly troubled with weakness and palpitation of heart. Almost on its first appearance I placed myself under the care of a physician of great celebrity. He said the disease arose from anæmia. He recommended mixt. fer and emplas belladonna, together with aperient pills, which were immediately put in requisition. From that time to the present I have been suffering more or less. Latterly, however—for the last eighteen months—I have been very ill. About ten weeks ago I consulted the professor who lectures on the practice of medicine in our college, and he recommended a different course of treatment, from which I derived no benefit. I have since tried a course of hydropathic treatment which I gathered from your work, and a world of benefit has been the result."

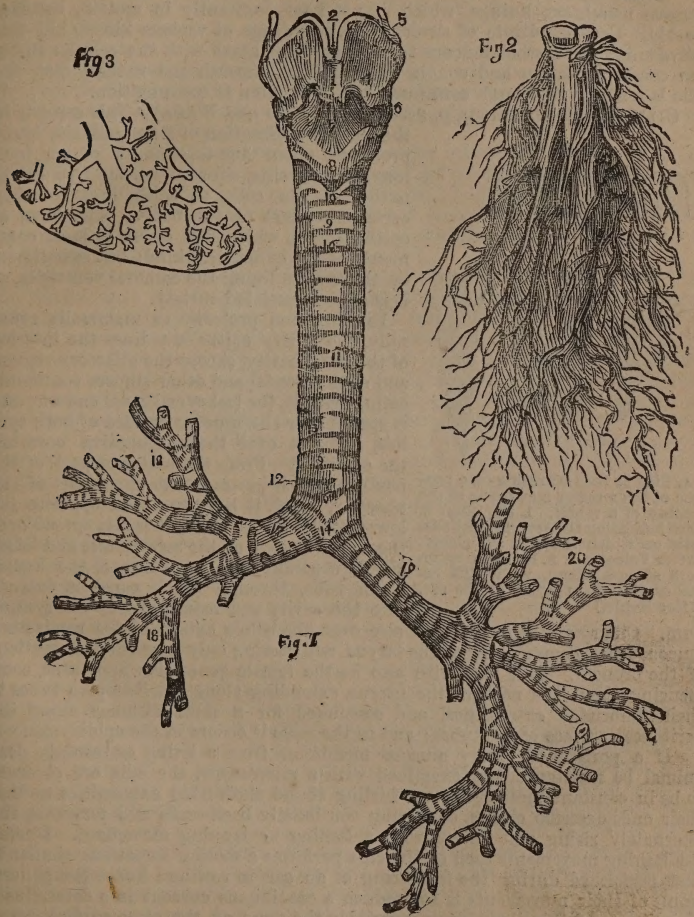
(*Case came and got well.*)

Case No. 18.—A gentleman, age about 55, wrote in April, from a town eighty miles off, saying he had inflammation of the lungs, and wished me to have a surgeon waiting his arrival, feeling himself, he said, in imminent danger. When he arrived, we found it a case of severe bronchial affection, with spasms that almost closed the throat. 82 and 81, with No. 64, 141, with mustard on chest and round the throat, was applied as he was reclining on a packing bed, and the legs up to the calves in hot mustard and water; after this fomentation has been on one hour, wiped the parts with a towel wrung out of tepid water, then rubbed the parts dry, and laid on a strong mustard poultice round the throat, top of the spine and chest, as long as it could possibly be borne; then dry chest compress and throat bandage. This was six p.m.: at ten o'clock, a hot mustard leg bath, wet throat pack, and spongio piline, chest compress with collar wetted with warm water, and wet flannel and body bandage, warmed the bed, and retired to rest. In the morning hot soaping and tepid sponge; forenoon, eight minutes' vapour, and sheet 70 deg. sitz bath 80 deg., ten minutes feet in hot water. This counter-irritant treatment and determination of blood to the surface of the body, by fomentations and vapours, with total abstinence from animal food, soon relieved the patient, and in a short time brought him to his former state of health, to his great delight and our gratification.

BRONCHITIS is very common, and persons with naturally strong lungs are often affected by it, and with a little attention, the hacking short cough may be got rid of. But this is not so easily done by persons with weak lungs, for they are often unaware of the danger, in their case going on to actual disease of the lungs, or what is commonly termed consumption. (See cut, Ciliated Membrane.)

The term bronchitis does not often alarm persons with weak lungs, from

their supposing it is altogether different from consumption; they are not aware that bronchitis is inflammation of the windpipe and air tubes which intersect the lungs; and which inflammation, if continued, produces expectoration, Nature's remedy to throw off the morbid mucous. But if this suppuration



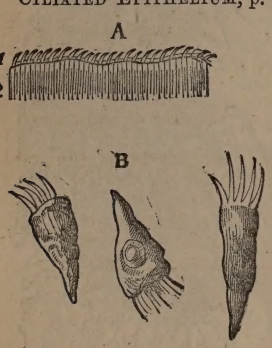
No. 1. Windpipe, with large bronchial tubes. No. 2. Small bronchial tubes ramifying into the lungs. No. 3. Air cells lining the bronchial tubes.

goes on, it is easily seen that the body of the lungs cannot long resist the influence of the morbid matter, and decomposition and change of the structure must be he consequence. Many physiological terms are very inapplicable and vague, but

having long been in use and adopted in works on these subjects, it is not easy to change them. Consumption is a term generally understood to mean of the lungs, and therefore I use it, although it may mean of the liver or other organs.

The following cut and description show the destructive nature of caustic being applied to the throat and other internal parts described. The office of the ciliated membrane is to circulate the mucous lining the throat and other mucous membrane linings, which, if not kept constantly in motion, becomes morbid. Caustic, nitrate of silver, acids, and drugs of various kinds, kill this active cilia; the morbid mucous then comes in contact with the cellular tissue and causes irritation and cough, and until, by warmth and natural diet, the cilia is renewed the cough continues, and leads often to consumption.

CILIATED EPITHELIUM, p. 84.—(*From Kirke and White.*)—This consists in the incessant vibration of fine, pellucid, blunt processes, about one-thousandth of an inch long, termed cilia, situated on the free extremities of the cells of epithelium covering certain surfaces of the body. The form of epithelium on which cilia occur is most commonly of the cylindrical kind; but sometimes, on the surface lining the cerebral ventricles, as it is of the tesselated variety.



A. Cilia as seen vibrating on a portion of the mucous membrane of the trachea of a rabbit. 1, the cilia; 2, lines indicating the several epithelial cells on which the cilia are placed. (After Valentin.) B. Separate cylinders of epithelium, with cilia attached, from the trachea of the cat. (After Henle.)

In man, and probably in mammalia generally, the ciliary epithelium lines the interior of the nasal cavity, except the olfactory region, and of the frontal and other sinuses communicating with it, the lachrymal canal and sac, and is spread over the mucous surface of both eyelids, but not over the conjunctiva covering the eye itself. From the posterior part of the nasal cavity, it passes to the upper part of the pharynx, which it lines to about opposite the lower border of the atlas; it is also spread over the upper surface of the soft palate, and laterally is continued to the orifice of the Eustachian tube, through which canal it extends into the cavity and membrane of the tympanum. Ciliary epithelium occurs also over the whole extent of the respiratory mucous tract, commencing at the larynx and ceasing only near the terminations of the bronchi. It is met with also in the female generative apparatus, commencing about the neck of the uterus, extending along the Fallopian tubes to their fimbriated extremities, and continued for a short distance along the peritoneal surface of the tubes; and in the male it occurs in the epididymis.

If a portion of ciliary mucous membrane from a living or recently dead animal be moistened, and examined with a microscope, the cilia are observed to be in constant motion, either whirling round their fixed extremities so that their ends describe circles, or waving continually backwards and forwards, and alternately rising and falling with a lashing or fanning movement. During the lashing movements each of the cilia performs a motion somewhat similar to that performed during the feathering of an oar in rowing: hence the general result of their movements is to produce a continuous current in a determinate direction; and this direction is invariably the same on the same surface, being usually towards its external orifice. In the production of such currents probably consists the principal use of the cilia, which are thus enabled to propel the fluids or minute particles which come within the range of their influence, and to aid in their expulsion from the body.

Bronchitis is a far more dangerous matter than persons are generally aware

of; it kills great numbers every winter and spring. Medical treatment for it is utterly opposed to restoration. My esteemed friend, the late Dr. Fearn, of Derby, one of the most eminent medical men in the county, died of it by his own treatment in his sixtieth year. Although a man of large means, he resided in an excellent house in the lowest part of Derby, almost on a level with the river Derwent, which there flows very slowly, and in winter throws off fog and miasma. The doctor had been subject to bronchitis for some years, but had warded off the attacks by caustic and blistering the throat, which, although professional, yet were entirely opposed to Nature's laws. Failing strength and a severe attack made his favourite remedies fatal; and they killed him without any organic disease; and so great numbers are doomed to death before the next bright summer comes round; there is a regular supply annually to the death-rate from bronchitis which might be saved.

When there is inflammation in the mucous membrane of the throat and windpipe, it must surely be against all reason and common sense to use caustic, blisters, and stimulants; but the faculty have laid it down those are the proper remedies, and if Nature does not consent and accord, so much the worse for Nature—she has to succumb. Orthodoxy, notwithstanding it is opposed to reason and common sense, must not be disowned.

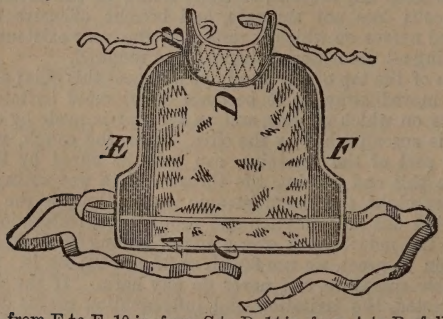
Bronchitis, or inflammation of the wind-pipe (the first large tube leading from the throat into the lungs) and of the air tubes branching from it, is very common, and may arise from a slight cold, from loud and long speaking or singing, or from the inflammatory state of the stomach. When it is only in the upper part of the wind-pipe, a little care soon cures and restores the ciliated membrane which has been destroyed. This ciliated membrane performs a very important office, it is on the surface of the lining of the wind-pipe, and in all the bronchial tubes except the most minute terminations. It can be compared the most easily to a fine downy surface, and is spread in a mucous network over the parts. This fine hair-like process is continually moving, and will show motion when expectorated out of the throat into warm mucilage. The office it performs is to keep the mucous, or slimy lining of the membrane, moving, so that the mucous does not stagnate, and become offensive to the delicate cellular tissue and nerves on which it rests; for the very existence of the body depends on keeping all the material changed and renewed.

Inflammation of the top of the windpipe displaces this cilia; and the mucous then not being moved away, as it becomes deteriorated irritates the cellular tissue and nerves on which it rests, and an attempt is made by coughing to do what in health is accomplished by the cilia. Now the cough, which proceeds from the upper part of the windpipe, can only be cured by the cilia being replaced; and to this end packing the throat with a wet wrung-out cloth, as 79 Bath list, every night, and damp spongio in day-time, is the most effectual method of drawing out inflammation and promoting a restoration of the parts. Use 58, holding the mouth open over a jug of boiling water frequently in the day. If irritation is great, we use 80, 81, or 82, and repeat it. Mustard, being a simple vegetable substance, can never do any harm. If the slight bronchial affection is neglected, the irritation and inflammation creeps down the tubes into the lungs, and then becomes serious. I once had a case of serious attack from over-fatigue and Sabbath services in the open air. A pint of matter was expectorated in the twenty-four hours, the attack having gone on from acute to chronic bronchitis, and unless this had been stopped, disease of the body of the lungs must soon have taken place. The remedy used was to keep the throat red with mustard plaster; packing the throat at night with wrung-out napkin and flannel over 79, washing the throat and chest with 14 on rising; wearing 178 damped and 186, 168¾, 174. On rising, a soaping and wash over with warm water, standing in hot water. In the forenoon a fomentation for twenty minutes, not very hot, wiping chest after with wrung-out

towel, 68 or 64. In the afternoon, feet in 105 deg. mustard and water. A towel body pack every other day, instead of fomentation. This continued for ten days, and then reduced the bathing, but still continuing chest and spinal compress until cough was entirely gone.

If the attack is in cold weather, it is necessary either to go to our warmed Establishment, or to a warm climate, wearing a respirator if at all exposed to the cold air, even in the passages, as cold air will of course irritate the parts. The bedroom should be warm; sleeping in the respirator very beneficial. When bronchial inflammation has gone on from discharging light coloured whitish matter, to dark or green, and slimy slough, sometimes streaked with blood, then the disease has attacked the body of the lungs, and is called pulmonary consumption.

SUDDEN ATTACK OF BRONCHITIS will be arrested by the following plans:—First, No. 9, 13; then, No. 68, and 138; 98 at bed-time. The following day have, on rising, No. 14 or 13¼; during day, 74 or 70, 141; and at night, 98, and 79, 208, 198, 196, 153, 177, 172. If in delicate persons, immediately apply 68 and 141; after this, 180, placing a piece of spongio piline, sprinkled with hot water, underneath collar of compress, and if no spongio, use flannel, and a good, warm, dry flannel wrapper over the collar. After the effects of the mustard have a little subsided, then attend to No. 226, and wrap the legs in strips of new flannel, and apply 153½ and 215, kept regularly renewed. Repeat the above 68 and 141 as often as required, to keep up good reaction on chest and legs; warm barley water to keep sipping. If food is wanted, milk, or milk and water, thickened with Du Barry's Revalenta, one ounce to a pint, sweetened with a little refined sugar, or taken with a little salt, but no bread with it. Revalenta can be had of any druggist or grocer. Food very light, and the less quantity the better; no stimulants, cough mixture, or any physic whatever. The temperature of the room should not be under 70 degrees; or if this cannot be had, use of respirator night and day till attack has subsided. The respirator is very useful and safe in such cases.



13 in. from E to F, 10 in. from C to D, 14 in. from A to B—full size
6 in. longer, collar 14 in. long, 3 in. wide.
See Darlow & Co.'s advertisement at end of book.

CHEST COMPRESS.—We use different kinds and sizes. The shorter chest spongio-piline compress, with collar, is invaluable in all chest complaints, and bronchial affections, or of the lungs. The collar is made of two thicknesses of calico, covered with oiled silk, and quilted. (See Bath list, 177, 178, &c.)

The spongio should be bound with tape, and have two crossings of tape at the back, to keep it from stretching, and should be worn night and day until the complaint is removed. It will not weaken the chest; but, on the contrary, greatly soothe, and bring external warmth and circulation and so relieve the

internal congestion. Worn dry, or slightly sprinkled with tepid water morning and night, but not too wet, or the compress will feel cold. The 179, without collar, will be useful at the back, and 179 in front, dry, as the apex of the lungs comes up to the point betwixt the shoulder and neck. The above chest compress we ordinarily use with a body bandage. Sometimes, however, the body bandage cannot be used for want of vital heat, and then we find the full-size spongio chest compress, 180, to be the best. Either of these chest compresses, or the calico one (see Bath list, 181 or 182) are excellent preservatives to wear in case of exposure to cold, or on occasions of public speaking, in winter. It should be observed, that if *any bandage feels cold, it will do harm, rather than benefit.* (See Bath list, 177 to 185.)

WET PACK FOR SORE THROAT.—Many a valuable life amongst the ministers of the gospel and public speakers would be preserved by the use of this compress, saving them from bronchial disease or consumption, by occasionally packing the throat at night as follows:—Take a napkin, wring it out of cold water, fold in four lengthways, wrap it round the throat, and two yards of flannel over it, or a macintosh body bandage; however often this is used, it will not injure or relax the throat. Persons should always take the precaution of sleeping in it after public speaking. This plan has been instrumental in restoring and preserving many a valuable life. It is well known that the majority of earnest ministers of the gospel and other public speakers become invalids, and are obliged to give up their work, from bronchitis and relaxation of the throat and uvula; packing the throat and using the respirator after sermons or lectures would most effectually save them. One point must be noticed, the flannel wrapper should be thick enough to keep a good warmth up; and in the morning sponge or wash the throat well with tepid water. In obstinate sore throat or quinsey, keep it on night and day, re-wetting once or twice in the night, and every half-hour in the day-time. Spongio-piline * could be used in day-time, being less bulky, but there must be good heat kept up. Bath list No. 82 two or three hours, followed by No. 81, six or eight hours, if internal swelling. 220 to throat useful. 196. Holding mouth over jug of boiling water and breathing the steam frequently during the day.

TREATMENT FOR RELAXED SORE THROAT.

KEEP *dry* spongio and flannel over throat, and when it feels too hot and uncomfortable, take it off and rub throat with tepid vinegar and water and hand, and then put it on again. Gargle three or four times a day with tepid water, or Condy's Fluid, eleven parts water to one of pure fluid, and keep a mackintosh bag with a little hot water to upper part of chest as much as possible, and lie still.

If throat feels choky, then use a jar with boiling water, and hold the mouth open wide over it and let the steam go down, and let all the saliva run into the jar *before gargling.*

Use 22½ with vinegar and water all over body morning and night.

178 or 179 and 163¼ and 179 on back would hasten cure.

THROAT AFFECTION AND DIFFICULTY OF BREATHING.—An elderly lady had for a long time been troubled in this way. A flannel wrapper wrung out of hot water was put round the throat every night, and a large roll of dry flannel over it. This was continued for a week; sponging the throat with water, 80 degrees, in the morning, and putting usual half-chest wet

* Spongio-piline may be bought of Wandle Felt Company, 14, Hanover Square, London, and at most druggists'.

compress on with collar during the day, soon quite removed the complaint. If stubborn, mustard plaster on the throat, and kept red for a few days, with hot mustard foot-bath at bed-time, will aid the fomentation. (See Nos. 79, 80, 81, 82 on Bath list.)

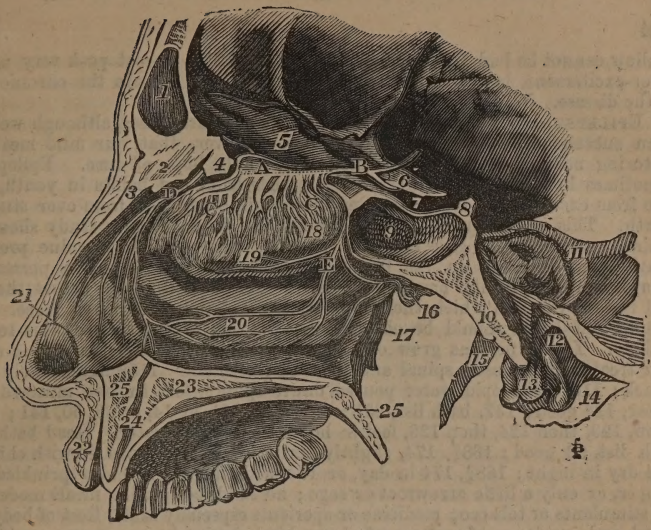
INFLUENZA.—The treatment varies according to the age and strength of the patient. In ordinary cases we commence with 46, and 12, 12½; then 156; afternoon, 93; bed-time, 156, 194, 168, 172; next day, same, and 208, 212, 213; 59 is very useful in some cases. Any stronger treatment will be prejudicial, as the strength is always greatly reduced in these cases; and, in fact, it is the lowered vitality of the frame which is the cause of the complaint. Next, warmth and patience are requisite. Influenza is not to be got rid of like a mere cold or bilious attack; and every attempt to do so quickly will only more endanger the patient's life, by laying the foundation of chronic disease. If 46 cannot be managed, substitute 52.

QUINSY, OR INFLAMED OR ULCERATED SORE THROAT.—46 and 80 same time, and 14 after pack; then 79 and 166, 177. Every two hours use 82, until relief is given; then 79, 98 at bed-time, soaping, and feet in hot mustard. No. 138 during the day, for fifteen minutes, good. A perseverance in these plans will certainly cure without medicine. If relief is not soon had with 82, put on 81, and repeat it if the skin will bear it; 208 and cooling drink; aperient medicine will only increase the mucous inflammation. Thin barley water very good, and also one-third of a bottle of soda-water, with a spoonful of raspberry vinegar bottom of the glass; repeat this every four or five hours. 215—No. 46 repeated every day till relief is had. If the patient feels weak after the first one or two packs, use 141 or 144 instead, and wrap legs in dry flannel, and feet also, holding mouth over boiling water and breath the steam frequently. We have proved these plans effectual in a severe case of ulcerated throat, after scarlet fever recently.

DISEASE IN THE FRONTAL SINUS (see cut), CAUSING FETID DISCHARGE FROM THE NOSE, is often very distressing; sometimes decayed bone will come away with the matter. We have successfully treated several cases which had resisted all other remedies, by the following simple plans. One case of years' standing was cured in two months, and is now, two years since, quite well. Twice a day put feet in hot mustard and water, and at the same time use bath No. 136; use No. 92 night and morning for ten minutes, and head wrapped as in No. 136 same time. The ordinary home treatment, dripping sheets, &c., to be practised in addition. 131½, 136 good.

CATARRH, OR NOSE COLD.—Wet pack the forehead, then put some tepid water into a basin or mug, and put the nose into it, and commence sniffing up the water; do so for three or four minutes, then wait awhile, and do the same again, repeating this several times a day, according to the severity of the attack. Keep the whole head well packed all night; a little flannel pad squeezed out of hot water, and laid over the forehead before the wet bandage is put round the head, aids the beneficial effect. This plan will also stop nose bleeding, with the addition of keeping a cold cloth at the nape of the neck. No. 111 will be of use if above unsuccessful. 131½, 136, 136½.

COLD, CATARRH, OR STUFFING IN THE HEAD.—Take No. 137 on Bath list, and then wipe over legs and feet with tepid wet towel, then 195. After getting into bed, put a cold wet cloth on the top of the head, have some boiling water and hold the face over the steam, throwing a blanket over the head and over the vessel with hot water, to keep in the steam, for five or ten minutes if comfortable (*frequently renewing cold wet cloth on the head*); then sponge face and head with tepid water, and pack the head according to 134. If cold is heavy, the quickest way to cure it is to keep in bed day and night, and repeat the above once or twice during the day; but if slight, the above at bed-time will suffice. 136 after steaming will be found to hasten the cure, and even would of itself cure slight attacks.



1, the cavity of the frontal sinus; 2, the nasal spine of the frontal bone; 3, the right nasal bone; 4, the root of the crista-galli; 5, the roof of the right orbit; 6, the anterior clinoid process of the sphenoid bone; 7, the concavity of the cella Turcica; 8, the posterior clinoid process; 9, the sphenoidal sinus; 10, the basilar process of the occipital bone; 11, the petrous portion of the temporal bone; 12, the anterior condyloid foramen of the occipital bone; 13, the right condyle of the occipital bone; 14, the inner aspect of the mastoid process; 15, the styloid process of the temporal bone; 16, the opening of the Eustachial tube; 17, the external pterygoid plate of the sphenoid; 18, the projection of the superior spongy bone arching over the superior meatus; 19, projection of the middle spongy bone arching over the middle meatus; 20, projection of the inferior spongy bone arching over the inferior meatus; 21, section of the soft parts of the nose; 22, section of the upper lip; 23, section of the hard palate; 24, the nasopalatine canal; 25, section of the uvula. A, the bulb of the olfactory nerve; B, the three roots by which it arises from the brain; C, C, the distribution of its filaments to the mucous membrane covering the superior and middle turbinate bones; D, a twig from the nasal branch of the ophthalmic division of the fifth nerve; E, the spheno-palatine nerves, or nasal branches of Meckel's ganglion, entering the nasal fossa through the spheno-palatine foramen.—*Quain and Wilson.*

The distribution of the olfactory (to the nose) or first pair of cerebral nerves, by which the sense of smell is communicated to the centres in the brain.

The distribution of the filaments of the olfactory, spheno-palatine, and fifth nerves, to the mucous lining of the external wall of the right nostril.

ASTHMA.—There are various kinds of this affection, and mostly incurable; but we have often given great and even permanent relief by the following plans:—Foment the chest, and then apply half chest spongio-piline damped compress, and wear this or a calico chest compress whenever the breathing is difficult; and also wear a wet body bandage occasionally, to keep the stomach and bowels in order, 177 or 178, 168¾, 174, 72½.

Maw's Respirator* will be found of very great service in going out in cold or foggy weather, and may be kept on all night without inconvenience; this is very necessary if the asthmatic subject sleeps in a cold room. Stimulants, tobacco, or much flesh-meat aggravate asthma greatly. During a paroxysm, a hot-water shallow bath ten minutes, and after a tepid wash down, is very good; or, if

* Solomon Maw, 11, Aldersgate Street, London. Price 5s., or 5s. 4d. per post.

shallow cannot be had, 93 or 98, and 14, 12, or 12½. Throat pack very useful. Over-excitement, late hours, irregular living, will aggravate the chronic state of the disease. Warm clothing in winter is essential.

Epilepsy.—We cannot always insure cure of these cases, although we have been successful in some cases. I believe, however, that our mild means of restoring natural action of the brain is the only hope of cure. Epilepsy is sometimes hereditary; in other cases proceeds from bad habits in youth, and also from excessive use of intoxicating drinks; in other cases from over study in youth. This is a frequent cause of the fits, and in such cases study should be entirely suspended, to give the brain time for recovery. Any undue pressure continued will result in the fits being confirmed, and often in permanent incapacity of the mental powers. Excessive exertion frequently causes the fits, and various excesses which those who have them can pretty well trace. The utmost self-denial should be observed not to risk a repetition of this serious malady. Young persons grow out of them more frequently than those older. Our treatment is mostly spinal and stomach treatment. 115¾ immediately after attack; 115 bath, tepid water poured down spine; feet in hot mustard and water, 114 good; 137, bath list, 231; on rising, 26½, or 14, or 96, 50, 141; fore-noon, 123, then 124, then 128, feet in hot mustard and water. Head bath, 131 bath list, 92 good; 168¾, 174, slightly sprinkled, or 220 sprinkled with chillies; 234 dry in night; 168¾, 174 in day, or 174 with flannel, and also sprinkled; no supper, or only a little arrowroot or sago; no solid food; other meals moderate; no stimulants or tobacco; medicine or aperients especially bad. Rest of body and mind, and avoidance of excitement of any kind absolutely necessary; avoid raw fruit, or any food not very easy of digestion; drink two or three tumblers of water per day by sips. Cocoa made from stewed nibs better than tea—water best; coffee too stimulating. Ladies will understand when to leave off treatment for a few days, and when they have a head bath need not dry the hair, but just squeeze out the water and fold the back hair up wet will be good. 215½ bath list good, if head hot. I advise the use of elastic merino nightcaps, and it is important to keep the head warm in day; if cold, the circulation is more difficult. Woollen stockings necessary. 154, 156, 157, all good, and easily done.

Case No. 6.—Age 22, Epilepsy.—Under the following treatment he had only one attack, shortly after he came, and has had none since:—First morning, 101, 30; second, 101, 3; third, 101, 3: first forenoon, 36 slight; second, 111, 132; third, same: afternoon, 111, 132, 155, 186, 164, 172, 208.

Bromide of potassium is the doctors' standard remedy for epilepsy. Dr. Legrand has published the results, as under; but none of the 207 patients have come off scatheless, and many would end their life in the frightful manner the doctor states as the effect of his nostrum. It is the usual anti-vital treatment—fire, sword, and poison—to destroy disease and the patient too. When will people demand to know the nature of the stuff they are called upon to swallow?

Bromide of Potassium in Epilepsy.—Dr. Legrand du Saulle has published, says the *Gazette des Hôpitaux*, the results of the administration of bromide of potassium in 207 cases of epilepsy. Headache, gastric disturbance, disturbance of sensation, and other troublesome symptoms, have been described, as following the use of the remedy. Of 207 epileptic patients treated with bromide of potassium, all symptoms of epilepsy ceased in 17, who were under observation during three or four years; 28 remained free from one to two years; in 33, there was marked improvement; in 19, the intervals between the attacks were increased, and these were less severe; in 110, there was no result (*but ruin*). Dr. Legrand considers that it is not safe to entirely omit the use of the bromide even when there has been no epileptic attack for a year. *Yet, strange contradiction, the*

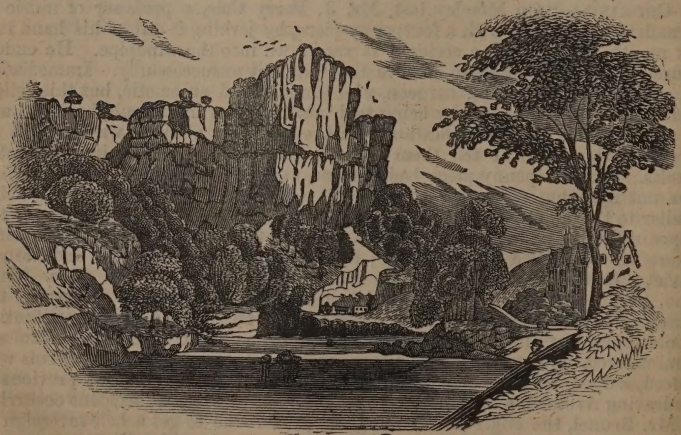
doctor goes on warning against the prolonged use of it, and says:—"The patients, however, must be watched; for under the prolonged use of the bromide, mental disturbance, stupor, confusion of ideas, impotence, and acne, are apt to set in. The last-named affection has sometimes disappeared under the use of arsenic simultaneously with the bromide of potassium." *Such is the dreadful ministration of drugs, which produces such frightful results; nevertheless, the highest medical authorities go on with them, to mankind's suffering and destruction.* A case in point I met with this morning at the Institution. A fine, wiry frame, previously full of energy, now a shadow of his former self, and unable to remember the previous day's occurrences. The certain effect of bromide of potassium, given him by one of the highest medical authorities in London. Its terrible effects are dreadful to witness as I have so often done, and yet it is a standard medicine, and given freely.

LOSS OF VOICE.—On rising having the chest and throat rubbed with 70 degrees water, till red, then wet pack the throat, and put on a dry spongio piline chest compress, and a piece of new flannel round the bowels; then put the feet into 100 degrees mustard and water for three minutes, and wipe them with a towel dipped in 80 degrees water, and *dry* rub with the hand. In the forenoon, put the feet and legs up to the calves into 100 degrees mustard and water for ten minutes, and rub the chest and throat again, as on rising; then pour a can of cold water over the legs, and dry rub them with the hands till warm. Afternoon, take a running sitz bath 80 degrees for ten minutes, and daily reduce the heat of this bath till it can be taken cold; rub the chest and throat again as before. At bed-time, repeat the rubbing on the throat and chest, and put feet into hot water two minutes, then put on wet and dry socks, only wetting the soles of the socks, and keep them on all night. If the above does not speedily produce a good effect, then apply fomentation on the chest morning and night for fifteen minutes before the rubbing, and also put on occasionally a mustard poultice on the chest till it becomes red. 80, 81, 82, and frequently steaming the throat by holding mouth over boiling water and breathing the steam.

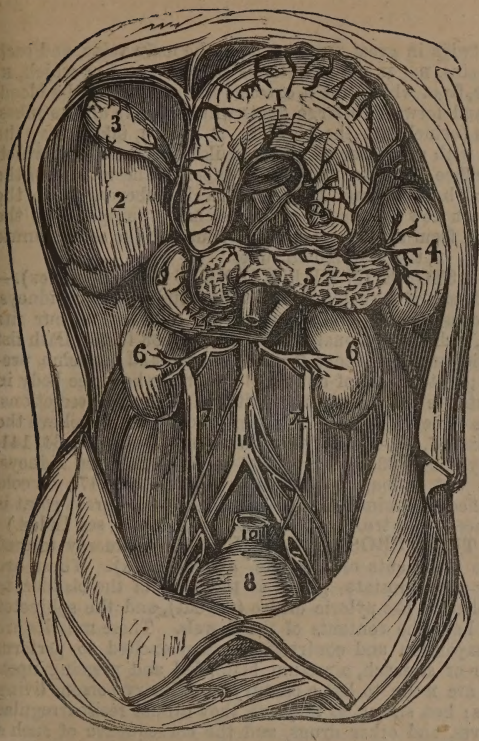
CHOKING.—"On Monday last, Mr. J. Parry Cole, a professor of music at Arundel, was playing with a fourpenny-piece, by jerking it out of his hand into his mouth, when by some accident it was drawn into the windpipe. He endeavoured by various means to remove the coin, but unsuccessfully. Immediately he sought a neighbouring surgeon, who administered an emetic, but this failed, and Mr. Cole was appalled by being told 'that nothing more could be done,' and it was probable that mortification would ensue. So alarmed was he that he wrote to his friends to tell them of the unhappy accident and its anticipated results. The fourpenny-piece had become wedged in edgeways, and breathing was not interrupted, further than that it produced a kind of wheezing noise, similar to that in an asthmatical person. After trying every means to move the impediment during the night, Mr. Cole hastened to Chichester the next morning, where he was called professionally; but being unable, from pain and natural anxiety, to attend to his duties, he called at the surgery of Mr. C. S. Jones, who, by auscultation, could easily detect the coin lying at the bottom of the windpipe. The same sad tale was told him as before, and that mortification would probably set in in two days. The only chance was to have some chloroform administered, and endeavour to remove it by an external operation. This was, indeed, sad news for a young gentleman in the prime of life. But previous to his leaving Arundel, a lady had reminded Mr. Cole of a similar accident occurring to Mr. Brunel, the engineer, who had the misfortune to get a half-sovereign in his windpipe in playing with his children. The way in which that was removed was in placing the gentleman on his head, and giving a violent blow at his back. Mr. Cole mentioned this circumstance to Jones and his assistant, but both were

somewhat doubtful of such an experiment. However, Mr. Cole insisted that this singular plan of removing the imprisoned coin should be tried. A cushion was placed on the floor, his legs were raised in the air, and a violent blow was given on the back; immediately Mr. Cole shouted 'Here it is!' and true enough the fourpenny-piece had fallen from his mouth upon the floor. To describe the feelings of the patient at this moment would be impossible. The medical gentlemen were equally delighted at the result of their operation; the cushion on which Mr. Cole had placed his head was seized and thrown up into the air, and three hearty and joyful cheers were instinctively given at such a happy termination of what had threatened to be a most melancholy misfortune."

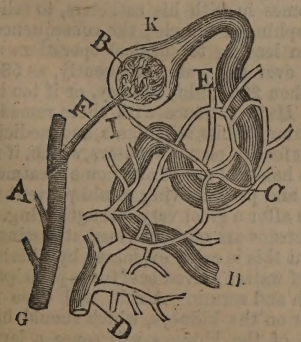
Swallowing a Bullet.—"A Highland shepherd, whilst mumbling a small bullet between his teeth, unfortunately let it escape from them and slip into the windpipe. He coughed incessantly for two hours, after which he had slight inconvenience beyond a little occasional dry cough, till the middle of the following day, when he was attacked with shivering, headache, and deep pain in the right side of the chest. The shivering and headache ceased, but the pain continued, and he was excessively drowsy. On the evening of the third day he was seen by Dr. Macrae, who, being satisfied of the lodgment of the bullet, 'directed the man to be strapped securely to a common chair, that he might be easily suspended from the rafters of the roof with head downwards, in order that his chest might be conveniently shaken by a rapid succession of sudden smart jerks, and that the weight of the bullet might favour its escape from its seat in the lungs.' He was kept depending as long as he could endure such an uncomfortable position, and then placed in the horizontal posture for a few minutes to rest; when sufficiently recruited he was hung up again. Upon being taken down the first time, he described the pain in his breast as moved nearer to the top of his chest, and during the third suspension he joyfully exclaimed, 'Thanig-á, thanig-á!' ('It has come, it has come!' in the Gaelic language), immediately, after a smart shaking and a few convulsive retching coughs, and spat the little bullet from his mouth."—*Household Surgery; or, Hints on Emergencies.*



HIGH TOR, MATLOCK BATH.



General view of the viscera of the abdomen. — 1. Stomach raised; 2. under surface of liver; 3. gall-bladder; 4. spleen; 5. pancreas; 6. kidneys; 7. ureters; 8. urinary bladder; 9. portion of the intestine called duodenum; 10. portion of the intestine called rectum; 11. the aorta. — *Dr. Smith.*



THE KIDNEYS.

The kidneys are situated in the back part of the body, behind the stomach, and just under the lower ribs. They are for purifying the blood, and also for carrying off the principal part of the liquid which has been taken into the stomach, and absorbed into the blood. To effect this, the blood is carried by veins into the substance of the kidneys, and there the electric power extracts the urine from the blood, and along with it, impurities which, if suffered to remain in the blood, would bring on disease and death. The engraving will show the plan of the veins which circulate in the kidneys. It only shows a few of them; the number of similar ones in both kidneys can scarcely be numbered. For instance, the uriniferous tubes, H, are in bundles of twenty together. All these little suction pipes are at work at the same time, extracting the urine from the blood. G is the vein bringing the blood into the kidneys. A and B are small

veins that branch off like twigs in great numbers from the main veins, and each ends in a tuft or ball of veins, B. H is a uriniferous tube, one end of which, K, incloses the tuft of veins, B, from which tuft it extracts the urine from the blood, and carries it down to H, and forward to large ducts which receive all the tubes, and convey their contents (urine) into the bladder. A vein, I, takes away the purified blood and unites with a number of other similar veins, E and C, which are performing the same office to other uriniferous tubes. These unite in the vein D, and carry the blood back through various intricate tubes again to the heart, to be again mixed with new material, which, after being pumped into the lungs, to receive the oxygen from the air, again comes round to the same minute vessels, to be again purified. B, the Malpighian tubes.

GALL-STONES AND STONE IN THE KIDNEYS (see cut, Index).—These proceed from vitiated state of the gall and impurities retained in the kidneys, and are often fatal, after causing long and severe agony. The use of our sitz baths and home treatment, and an occasional 98, 48, and 163, 233 to 236 Bath list would, with attention to diet and abstinence from stimulants and medicine, prevent them forming at all; but instead of our simple means to keep the body in health, drugs and stimulants are resorted to, hence vitiated state of the secretions.

But when suffering has come on, instead of blisters and opiates to relieve the pains, we give our Bath list 47, 98, 48, for liver, often for gall-stones; 64, 141, 137, 13, 13¼, and especially 220 or 234 in night, 233 in day; 115¾ for kidneys, 59 once or twice per week, but as long as the pain lasts have 98 or 47; no cold water, no stimulants or coffee, no animal food, no medicine. The great point is to get all the heat on surface round trunk. (For cut of gall-stones, see Index.)

CONGESTION OF THE PROSTATE GLAND, commonly termed the old man's disease (see three cuts of prostate gland, Index). These are three porters in the body—the prostate gland, at the neck of the bladder, to hold the contents of the bladder, the pyloric orifice (see cut), and the sphincter ani, at the seat or anus, to hold the contents of the bowels. These muscles are very strong, and act by expansion and contraction, when excited to perform their office by the bladder or stomach, a rectum being full and pressing upon the gland. These glands are made to last a century in ordinary persons living according to Nature's laws; but strong as they are, they cannot resist irregular living, stimulants, purgatives, and other drugs, and the consequence of such a course is terrible suffering. The doctor comes in with his catheters, to relieve the bladder, and the bougue to stretch the sphincter muscle; the consequence is increased congestion and inflammation, often leading to surgical operations and death. In such cases our 98, 99, 115½; sit over hot water frequently, as 58; a 59 twice per week good, 47 once or twice, then 234 night, 233 day, or if too hot, 163; no stimulants, medicine, or tobacco. Have patience with these remedies. Congestion of the prostate is caused by sedentary habits, stimulants, and medicine, and keeping the parts unnaturally hot by our foolish plan of trousers, which, if not tight at the fork, are always too close. The habitual use of our home treatment, and especially our sitz baths, 86, 105, 106, and proper living would prevent the disease. The use of the 105 for one minute after a stool very strengthening.

DISEASES OF THE KIDNEYS.—Persons are often alarmed at passing so much more urine than they take in liquid, but this is easily explained by a healthy body of 154 lbs. weight containing 111 lbs. of water. Even beef turns principally to water; in other words, liquid from lymph and serum. A cold will close the pores, and throw a large quantity of water on the kidneys, which should have passed off by the skin. Slight derangement of the kidneys will cause a larger quantity of urine to be passed off, same as looseness of the bowels. A large discharge of urine is simply a functionary derangement, unless persistent, and then diabetes may be in operation. The space I have here will not permit

me to go into the intricacies of this subject; I can only make some general observations upon the irregularities and diseases of these organs. Quain's work on the subject gives the best and most extensive information. I give in this work a clever engraving of the blood-vessels and absorbents in the kidneys, with a description of their nature and offices; and it will be seen how delicate and wonderful the action of the Malpighian tubes are; for through these knots of blood-vessels the uriniferous tubes which cover them draw out, by their electrical power of attraction, the urine from the blood. How this is accomplished physiologists have been unable to discover, for there are no perforations nor any appearance of outlet; they can only tell that the act of abstracting the urine from the blood is there performed, and carried into the bladder. Other impurities are drawn away out of the blood by the same process. Comparatively little attention is paid to the state of the kidneys in doing their work healthily. All attention is often absorbed by the bowels, when it is as necessary to health that these organs should take out the waste matter from the blood as the bowels do the fæces. The delicate structure of the kidneys points out at once how necessary it is to live in the plain manner it was designed we should do, for all the ale and porter, and the wine and the spirits, and the hot condiments, and the infinite variety of the cook's inventions, enter the blood, and have to pass these purifiers as well as the liver.

Alcoholic drinks wear these fine knots of vessels out, or cause inflammation in them; and the consequence is, in thousands of cases, destruction. The uriniferous tubes, when diseased, draw out with the urine, serum, and the life of the blood; bringing on diabetes, which so rapidly reduces the body. I am often told persons have the gravel, and that there is a gravelly sediment in their urine: this is a mistake; that sediment comes from excess of impurity in the blood, from the liver not taking its proper share of the work with the kidneys for purification—when the liver is put right, the sediment mostly disappears.

Where there is pain in the small of the back, where the kidneys are situated; or uncomfortable feeling, with restriction of urine, and the urine high coloured, I find the best remedy is the use of the hot fomenting pads for half an hour; one on the back, and another on the front of the body, 64 Bath list; with a hot can underneath that on the back, and one on the front; 70¾ often as can be borne. This is beneficially stimulating to the liver and stomach, as well as the kidneys. After the fomentation use 220 to the kidneys; 115¾ good; 174 damped; under bandage plenty of wrappers, to keep up vital heat to the part. Continue body bandages night and day; 98 good at bed-time.

Avoid all acids, or pepper, mustard, coffee, ale, porter, or any kind of wine, or spirits, or tobacco, abstinence from animal food till better, 77 Bath list as much as convenient, and the less walking exercise till well the better. People have little idea what they are drinking when they take sherry and port wine; these drinks are in fact wine and brandy. Port wine is allowed by the Excise to be fortified with 40 per cent. of brandy, and sherry in proportion, and the consequencies to the consumers are also in proportion. Persons of active habits, when out of order, will not give Nature time to recover, and suffer accordingly. Nature's laws are unalterable and inexorable—the disregard of them punishment and death. Thousands lead a miserable life who might be in comfort if they would regard Nature's admonitions, and resolutely act upon them; but the delusion is general, that any ailments can be met by physic—allopathic or homœopathic—without the necessity of self-denial and trouble. But "truth is great, and will prevail," and the body finds this out in constant trouble and change, from one medicine to another, and from one doctor to a fresh one. If the skin is not kept in good condition, and its pores free, the matter that should pass through it is thrown on the kidneys, and back on the system. Nature uses any

outlet to relieve itself of impurities. Entire rest reclining is essential in this disease. Another and primary cause of disease is the presence of albumen in the urine, from the lowered vitality of the nutritive nerves not having power to keep up the healthy chemical compounds. In any disorder in the action of the kidneys, try the effect of our applications to the skin, and the sitz baths, and the body bandages, and I am sure relief will be found, and without possibility of harm; not so by drugs. No. 93 Bath may be used often; 70¾ very efficacious; and 220.

DIABETES.—This is a disease that is never cured by medicine. The cause is, that instead of quieting the inflammatory action going on in the kidney (and especially in the Malpighian tubes), porter, wine, and flesh-meat are ordered in profusion, along with physic, increasing the inflammation in those parts; thus, by the introduction of more inflammatory matter, under the idea that all these "good things" are necessary to keep up the strength of the patient, but which, instead, add fuel to that fire already burning, and thus consumes the structure with double speed. The cause of the inflammatory action is in the blood, which, by the frequent use of stimulants and improper diet, has become diseased, and its chemical properties deranged; and by it disease is carried into the kidneys and the delicate structure of the Malpighian tubes. We first use strict diet, abstinence from all stimulants, &c., as I have stated in affection of the kidneys; no flesh-meat, gentle fomentation, sitz baths Nos. 115½ and 98; but the system is soon so lowered that even dripping sheets and sitz at 80 degrees are too cold. For these cases we give them at 90, until they can be borne with comfort lower. There is the lowest vitality to deal with, and excessive or strong water treatment would inevitably do mischief. (70¾, 168¾, 220, before and behind, 169¼.)

WEAKNESS IN THE BLADDER, or Stricture in the Urethra.—This elderly persons are often troubled with. The use of the body bandage 233 and sitz bath, 115 is very beneficial, several times per day. I have a case now of a gentleman, rather stout, and otherwise healthy, age about 68; and the following is the prescription given:—On rising, 144 and 14; forenoon, first day, 115½ five minutes; second, 90 and 107; afternoon, 107 and 172. No 98 is a very useful bath in many of these cases, and easily applied.

BLADDER IRRITATION.—This is only a symptom of acidity of the stomach from indigestion, or from taking stimulants or highly-seasoned food, or cold. 91 Bath list twice or thrice per week at bed-time; wear 168¾, 220, 169¼, night; 168¾, 174, day. (See Bath list.) Avoid all stimulating food or drink, no tea or coffee; milk, oatmeal porridge, till the irritation and frequent desire to pass urine is over. Soda-water or effervescing draughts bad, and in these cases best change usual mode of living, but only take simple unstimulating food. 93 Bath list, good; also 69, 73¾, 115½. If in hot weather use 163, day; 163 with 169¼, night.

STOPPAGE OF URINE.—Immediately give 138, and rub the whole trunk of body as hard as can be borne without pain with towel and cold water whilst in 138; but if pain, then prepare 231 whilst the patient remains in 138. Continue in 231 till full relief for several times has been obtained. Each time when passing the urine sit over boiling water, so that the steam may prevent pain. If 231 cannot be applied, 98 or 93 must be attended to, but still use 138 first, and repeat 138 as needed afterwards.

INDIA-RUBBER URINALS FOR MALE AND FEMALE RAILWAY TRAVELLERS INVALIDS, AND CHILDREN.—These urinals are made on the most approved principles, and are all fitted with the recently-invented valve, which will not allow any return of the water by the upper part, by being placed in any position, and from their improved construction are better than any similar articles at present in use. Descriptive circulars and lists of prices sent per post. Hospitals, infirmaries, and unions, supplied on the best terms with every article for the use of the sick and invalided.—Sparks & Son, patent surgical truss and bandage makers, 28, Conduit Street, New Bond Street, London.

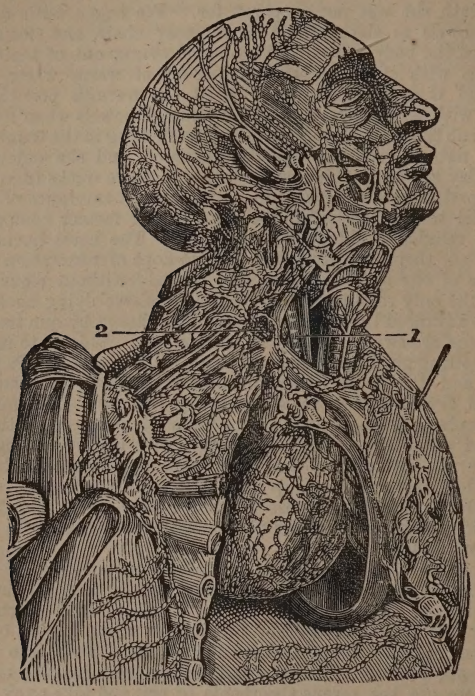
DROPSY.—The varieties of this disease, and the causes, can only be studied in the works of professional writers on the subject. The ordinary form of dropsy, with the swelling of the whole body, is one we have very successfully treated, when it has not been the result of heart disease; even then life has been prolonged, and ease given up to the moment of death. One such case was that of a female of eighteen years of age, who had been given up by her doctor: he had assiduously attended her, and done everything in his power for her relief, but in vain, and he expected her death every hour. In this state she was removed from her cottage, some distance from our house, to our Free Hospital, at the risk of dying on the way; but it was her earnest desire, for she greatly dreaded that death she was not prepared for. We began with fomenting her stomach and bowels as she reclined in an easy chair, and steamed the legs; afterwards wiped the body and legs with a towel wrung out of tepid water, then packed the legs with strips of calico wrung out of warm water,—mackintosh strips over, and then flannel to keep in all the warmth possible. Spongiopiline damped with warm water to the stomach and bowels when not fomenting; once a day dry rub the legs by two persons. The swelling in the trunk was reduced nearly to the natural size, the appetite returned, and she enjoyed her light dinner on the day she died, which was upwards of three weeks from the time she came. Her departure was without pain, and in perfect assurance of the salvation of her immortal soul. She called for some of her former companions to see and hear what religion could do for the dying. The heart having been irremediably diseased, there was from the first no hope of restoration; but it is no little advantage of our system to give ease of body without clouding the mind with opiates—the only resource of the doctor to relieve dying agonies. Several similar cases in advanced life have been similarly relieved by our treatment.

Often the legs are swollen merely from weakness. We see to renovating the stomach, and getting good functionary action of the liver, &c. Pack the legs as No. 214 night and day,—steam them once or twice a day, and pour tepid water over them, and dry well with towel, then dry rub with hand for five or ten minutes, and replace the packings. Every other day give a leg-bath to the knees in mustard and water 100 degrees, then wipe with a towel wrung out of cold water, then dry rub with a towel and hand, stroking downwards always in these cases; give little flesh-meat, but our usual diet, no stimulants of course. The more we see the invariable response Nature makes to these natural appeals, the more confidence we have in our plans. 50 with 141, 48 with 143, 69 with 41, also 220, 233, 234.

Dropsy is of two kinds: dropsy of the serous membranes—as the lining of the chest, the pericardium enveloping the heart, the covering of the bowels, the chest, brain, scrotum, &c., and simply means that the serous circulation is too weak to perform its functions, thereby causing an accumulation of the serum, commonly called water. Now, instead of boring a hole into the part, or putting in setons, to draw the water off, by invigorating the circulation by natural means we get the serous absorbents to act, and take away the excess of serum; and in this way we have had a great number of cases of persons recovered who had by the doctors been given up to die. General dropsy results from weakness of the lymphatic and serous circulation; and in these cases we have seen hundreds easily restored to health by our sound physiological remedies. The space in this work will not allow of my going more at length into these subjects, and I only add a parting injunction which concerns everyone's existence, that is, to think, reason, and act for themselves, and not give up their reason and bodies to be operated and experimented upon by those commonly called the "faculty," persons who, in many cases, seem to want the true faculty of discernment, so really essential to the profession.

The extensive system of lymphatic veins and glands distributed throughout the body absorbs matter, purifies it, and returns the nutritive part into the

system, and the rest into some of the channels which carry useless residue away. The glands perform a very important office, and act extensively as chemical laboratories in preparing nutritive matter for assimilation ; beyond the fact that they have this power, little is known of their complicated and delicate structure. The wonderful organism of the human frame, taken in all its parts and workings, is altogether past comprehension. It would make this description too complicated to go into all the minute particulars of the structure and working of the various parts of the frame. See " Grey's Anatomy," a book every man should read.



LYMPHATICS OF THE UPPER PART OF THE TRUNK AND HEAD.

(*See Cut Absorbents and Lymphatics, Index.*)

It will easily be seen what an outrage on nature it is to cut into these glands, causing incurable cancer in thousands of cases; yet surgeons are constantly making these deep, or, as they call them, free incisions, to the ruin of the patient.

SOURCES OF LYMPH.—The liquid part of the blood, called the *liquor sanguinis*, or *plasma*, charged with nutritive principles, exudes by the process of exosmose through the coats of the capillaries, and being diffused among the tissues, supplies to them respectively the matters proper for their repair. The residuum of the plasma is absorbed by the multitude of lymphatics which pass through the same parts, into which it enters by the process of endosmose. In

this state it constitutes lymph, and is carried back by the lymphatic vessels to the subclavian veins.—*Dr. Lardner.*

STRUCTURE OF THE LYMPHATIC GLANDS.—It was formerly supposed that in passing through the glands, the lymphatics entered into direct communication with the blood-vessels. The researches of modern physiologists have proved this to be an error. A lymphatic gland consists of a mass of minute lymphatic vessels, among which numerous sanguiferous capillaries (blood-vessels) ramify. Between the two sets of vessels there is no inosculation. They conduct their respective fluids altogether independently of each other. The lymph which passes into the gland by the afferent vessels, passes out of it by the efferent ones, having in the gland been infinitely subdivided by the minute and multiplied tubes which form the substance of the gland. Whether there is any interchange between the blood of the capillaries in the gland by exudation or exosmose and the lymph of the smaller lymphatic vessels, is mere matter of conjecture, unsupported as yet by any results of immediate observation. A healthy human body of 154 lbs. weight contains 111 lbs. weight of lymph and serum for the purpose of lubricating the muscles, joints, bones, and cavities. When these absorbents do not do their duty, hence dropsy, which we have cured in vast many cases by drawing the excess of lymph through the skin and kidneys, and invigorating the absorbents: many cases given up to die have been restored.

FOMENTATIONS have a very different effect on our plan from the ordinary methods of fomentations (see Bath list 64, 69, 46, 144, &c.) Our plan does not require constant renewal of the pads or flannels, and, consequently, soothe; and the effect is continuous. The ordinary way of fomenting by frequently changing the flannels causes shocks to the frame, and exposes the parts to the air while the flannels are being renewed. Our plan is so soothing that patients often go to sleep while the fomenting is going on.

"Bombay, February 4, 1872.

"I HAVE been led to ask your advice, on the perusal of your work on Hydropathy, a subject in which I take great interest, and one I need hardly say you have handled in a remarkably lucid way in the above-mentioned work.

"I have A SWELLING ON MY RIGHT CHEEK, just underneath the skin, hard like a ball: some call it a tumour, others a wen. I first noticed it two years ago; it was then not larger than a pea, and originated, I believe, by my having one day squeezed the skin between my finger nails to remove a little black spot (*acuo*). It then got larger, but has kept the same size for the last eighteen months.

"The surgeons (all clever men) whom I have consulted here say it must be cut out, but I have a decided objection to being 'hacked about,' at least until I find that Hydropathy, assisted by Nature, will not cure; but I feel firmly convinced that they will, when properly administered. This is my reason for asking your advice, and this I shall be most grateful to receive.

"For the last week I have been using a mackintosh bandage over a small piece of flannel wrung out of tepid water, worn at nights, and during the day when possible, bathing it every day with warm water; this I shall continue for another month at least, or until I hear from you. It gets and keeps quite hot underneath this bandage, so I hope it may do it good before long. Had I seen the treatment of swelling of this sort in your book I should not have troubled you; but on careful perusal I can see nothing regarding them. I should not care so much were the swelling anywhere else, but it is awkward being on the face. It excites intense interest amongst my friends. One day I am told confidentially that it has grown smaller; the next day it is getting 'a devil of a size,' &c. &c. In fact, were it not for these reminders, I might forget all about it.

"In conclusion, I can only regret that I never heard of your establishment before I left England (four years ago), as I am sure I should have benefited very much in every way. I have no faith either in doctors or in medicine, so I am tolerably safe, more

especially as I have your work with me. I show it to everybody, and I have recommended two booksellers to get copies for the benefit of the public at large. I have made up my mind to come and see you directly I get back to England, and wish very much that it may not be long."

ADVICE.

As numerous and in some cases dangerous results have arisen from not distinguishing between the fleshy tumours and the cystis kinds (the latter signifying a "bag of fluid matter"), one or two remarks may be useful, put in a practical form. The above letter will show the former kind alluded to; and our simple reply is, in such cases do nothing to the tumour itself, but raise up the vitality of the general health, and that will prevent increase of the swelling, and in some instances it has greatly reduced it. Whereas, if exciting applications of any kind had been merely applied to the tumour, injury would have been caused to it, and the general health failed in consequence, but as regards those of the cystis character, Nature wants immediately assisting by poultices (see 220 Bath list), steaming (see 58), and fomenting, to bring the morbid fluid into matter, which will generally show itself by a white head, and burst; but if very painful, and the patient feverish and weak in consequence, then, when forward enough to rightly discover the position of this sack or bag of matter, a slight incision should be made into it by a lancet; but the general way of lancing by medical men is sadly injurious to the nervous system, as they do it in a cruciform style, and go so deep into the delicate tissue, that Nature is sadly irritated and distressed in repairing the mischief; but in the simple way above given she does not even leave a mark. And then, after the whole of the matter is removed, a little damp wash-leather under the spongio or oil-silk will quickly heal and strengthen the part, and no more difficulty ensue.

Swollen Legs.—Often the legs are swollen merely from weakness. We see to renovating the stomach and getting good functionary action of the liver, &c. Pack the legs as No. 214 night and day—steam them once or twice a day, and pour tepid water over them, and dry well with towel, then dry rub with hand for five or ten minutes, and replace the packings. Every other day give a leg bath to the knees in mustard and water 100 degrees, then wipe with a towel wrung out of cold water, then dry rub with a towel and hand, stroking downwards always in these cases; give little flesh meat, but our usual diet, no stimulants of course. The more we see the invariable response nature makes to these natural appeals, the more confidence we have in our plans. There is nothing punishing—nothing in the treatment the body shrinks from.

(*Accident to leg, and allopathic ruin of it. If fomentation and poultice had been used at first, instead of the grossly anti-vital treatment, the boy would soon have been well.*)

"Kyneton, Victoria, Australia, March, 1872.

"For the past seven years I have not administered any drug or other medicine to my family, or taken any myself. Before that time I was constantly taking some 'simple,' as the doctor said—such as magnesia—being not strong at that time, and never robust.

"I have a special object in view in writing to you at this present time, being a desire to obtain from you, of your kindness, some plain directions how to treat my son's leg in order to obviate an *inevitable stiff knee.*

"Exactly twelve months since, my son Robert (eleven years of age) suffered from a swelled thigh near the knee on the left leg. The pain he endured was excessive. I called in the best surgeon I could find, and he said it was hip disease, arising from a scrofulous habit. He put the leg in a large splint, and tightly bandaged the foot, leg, thigh, and waist. As the swelling rapidly increased he applied leeches, then blistered the affected part, and subsequently he ordered it to be painted with iodine. This was done without any apparent reduction of the size of the swelling, and the knee-joint began to be incorporated in the affected part. After some weeks I had to request the surgeon

not to repeat his visits, as the sight of him so affected my poor sensitive boy that he almost became hysterical. This was observed by the gentleman himself, and being a kind-hearted man, it gave him pain. My wife and I then treated the leg in our own way, and by the general directions contained in your book, but found no special case to guide us. We used comforting poultices and half-packs to the other (good) leg and lower part of the body, and eventually to the upper part, with very great care as to diet; and upon the 24th May an opening broke out naturally, and discharged several pints of matter. This discharge has continued to this present date, but the amount of matter is not very great, and is daily lessening.

"About the 27th of December I conveyed my son (who was only at that time found to be capable of the effort) to Melbourne, and consulted an eminent surgeon. His opinion was that the child had not a scrofulous taint; and that he had not suffered from hip-disease, but from a splinter being knocked off the 'femur' near the knee. This was the cause of the swelling and pain. He also said that the injured bone would come away by simply treating with damp compresses well guarded against cold, and lime-water taken occasionally.

"Under this treatment a goodly number of pieces of bone have come away, but the swelling of the knee-joint has not sensibly subsided, and the joint is in consequence stiff; and we fear it may be permanently stiffened. To gain your kind advice how to treat the knee is my present object. You will greatly oblige by writing, or causing a letter to be written, *without delay*, giving directions how we shall treat it. I *know* that the synovial oil, or part of it, has left the joint, as it came away about four months ago in the ordinary discharge, though none has been seen to come away since then."

ADVICE GIVEN.

Wear on "wound" either damp wash-leather or soft linen, with oil-silk cover, whichever suits it best, and wear a "case" for whole leg and hip, made to *fit*, of flannel and thick mackintosh over the above. On rising, place a thick fomenting flannel pad, either nicely steamed or squeezed out of hot water, on the wound, and well rub the whole hip and leg with neat's-foot oil and hand, but not to *pain*, and using hot soap suds to whole limb occasionally, forenoon and afternoon.

Well "steam" the affected part, and renew the dressing. Bed-time repeat the rising treatment. When the limb becomes free from all *pain*, then hot and tepid spouting will be found very strengthening, and rub in either dry mustard bran, or chillie paste afterwards. Spinal rubbing and sponging will also be found very advantageous.

Case of large, hard tumour in the scrotum cured in six weeks; after having tried every means of reduction by the surgeons, nature expelled it in a wonderful manner; the patient being kept in excellent health during the month he was confined to his bed. The particulars will be given to any desiring them. The patient, aged 34, had a stroke of paralysis 18 months before; general health bad; had taken a deal of mercury, and the hydrocele came on; water formed, which had been frequently drawn away by puncture, until the tumour formed. First fortnight, treatment was given for the general health; No. 19 on rising. Nos. 51, 59, 62, and sometimes 63. The tumour was then attended to, and the following treatment, which soon caused a large opening in the scrotum: First morning, No. 92, eighty-six degrees; second morning, Nos. 35 and 125; third morning, the same. Every forenoon foment the part one hour and a half, then Nos. 115 and 124; afternoon the same and No. 151, lint out of tepid water, and new lint every time changed. Often and at same time sponge the matter carefully away, by squeezing spongefuls of tepid water over; very important to keep the matter cleansed out often; No. 165 wetted every three hours; no flesh meat. Had no trouble with bowels all the time, and no medicine whatever; the previous treatment had put the body in excellent health.

CANCER.—I have had cases of cancer cured at our institution; others we have been able only to relieve and save from suffering, which we have been able to do in every case, and prolong life. (For female cases, see Mrs. Smedley's "Manual.")

Cancer is commonly brought on first by congestion of the glands, then the use of caustic. Caustic destroys the organic nerves, the electricity in which nerves gives power to every part of the body to draw nutriment from the arterial blood. Blood goes to the part, but for want of the electric power cannot give nourishment to the part, hence sloughing; then caustic is applied to destroy the dead tissue, but ineffectually, for the sloughing extends and deepens, and cancer is established of a terribly painful kind, destroying the poor sufferer by a slow and painful death. My wife has saved many females from this terrible fate, both from external and internal affections. A gentleman came to me some years since with a cancer under the jaw. The cause was a simple cold, causing a glandular swelling, which would have been cured in a few days by hot fomentation, a poultice, and damp spongio to the part, throat pack 79, to overcome the congestion; but, instead of bringing heat to overcome the congestion, iodine and blisters were applied. This stopping Nature's action, the part gathered; then, as is the invariable practice, a deep incision was made, destroying the gland; suppuration went on, morbid tissue was formed, then the orthodox practice of caustic was applied until a deep hole was made and the sloughing extended from five to six inches and down to the collar-bone, exuding most offensive dark pus. In this wretched, hopeless state he came to me, and by our steaming the part, fomentation, linseed and bread poultices, our stomach and liver packs, our body bandages 168¼, 174, 169¼, our 51—59, 69, 141, to get up his health and make good blood, he became perfectly sound. When the swelling had come to a white head if the surgeon had merely punctured the skin, without going deeper, to let out the matter, then poulticed the part, it would soon have got well. Making deep incisions, destroying the glands, destroys life.

Another case I have now had similar swollen gland in the neck from cold. The surgeon treated it in exactly similar manner, and the result was precisely the same. After undergoing excruciating suffering for many months, and the diseased part having spread near the ear, where the central hole had eaten in above an inch deep, and the coils of morbid flesh spread over a space of five to six inches, the surgeon, expecting a fatal result daily, sent his patient to London, to be under Sir W. Ferguson, who could think no remedy but further to torture the poor sufferer with caustic on the extensive raw surface for three weeks, and then sent him home to die. He had his family assembled and took leave of them. Just at this critical period I was told of the case, and asked if we could do anything for him; I replied certainly we could give ease. At their request I sent a bathman, who commenced steaming and poulticing and packing, and gave immediate relief, and in ten days the patient was able to come to our institution (fifty miles), where he has progressed in health and cure of the place, without any relapse. Appetite good, tongue clean, good pulse, and free from pain, except at intervals for a short time. Our 59, 141, 48, with 168¾, 174, &c., keeps him in excellent health, making good blood and raising the vitality of the frame, and I fear not that he will get well. If he is restored to health, and the medical practitioners see him, they will still go on cutting and causticking similar cases, although knowing patients must sink under such treatment.

(*Swelling on Neck.*)

"The particulars concerning the boy Mr. Roys wrote about are these:—The boy is about eight years of age, and the swelling of the neck (or glands) has been coming upon him for about four years. The doctor calls it swelling of the glands, brought about by mal-assimilation of those nutritive properties that go to strengthen the body. He recommends cod-liver oil and sea air as the only remedies. He gives us iodine to apply outwardly. The present appearance of the swelling is that of a large swelling down one side of the neck, extending from behind the ear to the shoulder and top of the chest, and seems held tight in the middle, which gives it the appearance of two distinct swellings.

"Yours truly "J. SUMMERFIELD.

ADVICE

Get a piece of spongio, large enough to cover the swelled gland. Do nothing but keep spongio on part, damped, and 163 round body, and give 25, or with chillie paste all over body except the swelled gland, alternate days with 13½. For numbers see Bath list. Continue the cod-liver oil as 207 Bath list.

(*Case of Typhus Fever rapidly progressing to death. At their request I sent a bathman over, and he at once turned the disease by our 47 Bath list. I was certain my man would cure the case, as he has done in so many former cases, without one failure.*)

"In behalf of the family, I am happy to inform you my brother is getting on very nicely, under the care of Mr. Gratton. It is with a heart full of gratitude I convey the thanks of the *whole* family to you for your great kindness to us. I firmly believe had it not been for that kindness, we should at this moment have been mourning the loss of a dear departed brother. I feel you have been the means whereby he will ere long be again restored to full health and vigour."

"DEAR SIR,—It is with feelings of the greatest pleasure and gratitude that I write to you partly to say how much better I have been since my short sojourn of three weeks at your Establishment, and partly to ask further advice. You may have forgotten my case among the vast number that are constantly coming and going, but I believe I shall find your words true: that I shall consider it the most important journey I ever made in my life, having gradually improved ever since I came home. Of course I follow the treatment and diet as near as I can as when with you. I wish now to ask your advice about my little girl, aged twelve years, who has twice suffered from SWELLINGS IN THE NECK, once when five years old, and again at the age of nine; each time our doctor poulticed them until they broke. I am now fearful of another, having perceived the first signs of swelling about fourteen days ago. Though not very large now, so that anybody strange to the girl might not perceive it, yet I can see it getting larger, and on the touch you may perceive two small hard knots or lumps, about the size of an almond, slightly under the jaw-bone." Treatment, letter C (Special Treatment Index), unless painful, only *damp* spongio piline over the lump, silk kerchief round the throat—wear 163 or 168½; but if painful, 220 under 163. The object to be aimed at is to get more power in the digestive organs. No stimulants or medicine of any kind; simple diet.

WATER ON THE CHEST.—When effusion has taken place to much extent, the patient never entirely recovers, and it is mostly soon fatal. When slight, and in subjects not advanced in life, and when it has not been caused by excessive use of drugs or stimulants, it may sometimes be removed, simply by our gentle applications to the skin and the wet bandages, fomentations to the stomach, mustard applications to the legs, and foments. If a good crisis can be got in the non-vital parts, the legs, the effusion on the chest will sometimes be withdrawn, and the patient recover; but if any medical means are tried, recovery is hopeless, as the physic stops the action of the nutritive powers, by which alone the body can throw off disease. It is indeed distressing to see our friends the victims of the superstitious belief in the efficacy of physic to cure ailments which it never cures, but mostly stays one disease to set up another. I have seen stout persons trusting to the doctors' drugs to enable them to live in defiance of Nature's laws; the aperient and the lancet have warded off threatened attacks of apoplexy again and again. Often have I heard, "I am stout, I can stand reducing; I get a good clear out, and am well again;" but this clearing out ruins the vital powers of the body, sets up slow, chronic mucous inflammation, and eventually so weakens the frame that acute inflammation of some vital organ takes place, and a quick dissolution is the consequence;

or, in other cases of strong constitutional powers, water in the chest comes on; and then come the drugs to try to raise the vital powers for absorption, but the previous reducing processes long continued have cut the very ground from under the deluded patient, and he dies long before God intended, had God's laws been observed,—eating and drinking to live, and not living for the gratification of the appetite. What account will such persons have to give to their Creator of their stewardship, that the world thinks little or nothing of; but the fact remains, that God in his Word declares, "*he that soweth to his flesh shall of the flesh reap corruption.*"

DROPSY OF THE CHEST is effusion of the serum and lymph in the cavity of the chest, just as DROPSY OF THE BOWELS. In both cases we use our usual means to renovate the health. Our 64, 141—48, 143—50, 141, 70¾, 223—114, 73¾—178, 186—233, 234—159—115½; 59 carefully, 52 sometimes on 39, all with a view to get the skin to free action, and raise the power of the stomach, liver, and bowels, avoiding all medicine or stimulants. Purgatives destructive, or diuretics. We have cured some severe cases, especially dropsy of the bowels, when we have got crisis all over the bowels, and the water has been carried away by crisis. One, the case of a wine merchant, age 38, had rheumatic fever five times; brought on dropsy of bowels and heart disease. Tapping was proposed in London, but his relatives had benefited at our institution. They insisted on his coming; he came, and was perfectly restored to sound health by our treatment.

The editor of a northern newspaper, about thirty-five years of age, came to me this summer, dropsical, flesh flabby, and so pasty that I could imprint my finger almost in any part of his person. His medical attendant said he had done all he could for him, and he then (as is usual with the majority of our cases when physic, blisters, setons, &c., have been tried to restore vitality and failed) came to my establishment, and was much surprised and pleased to hear me say his recovery was certain, if he would give me time, and obey my directions strictly. I began with gentle fomentations to the stomach and bowels, with tepid dripping sheet after, 50, 141—48, 141—64, 141—70¾, 59; gentle vapour five minutes, followed by shallow bath, 70 degrees; dry rubbing all over by two men, sometimes with, and sometimes without, a little dry mustard; then, without washing, replace the wet body and leg bandages—sometimes steamed the legs only—watching the strength, and only giving as much treatment in one day as his low powers could bear; 233 night, 234 day. After three weeks he was covered with crisis, which discharged freely, and on his legs and ankles to such an extent that it ran into his shoes. He was in a pitiable state, and despaired of recovery. I told him I had not the least concern for him, or doubt of his entire restoration from the first, having perfect confidence in our appeal to nature by such natural means. He has long returned to his duties, and has written to me this week saying he is in perfect health, and has stood the fatigues of a contested election without any inconvenience.

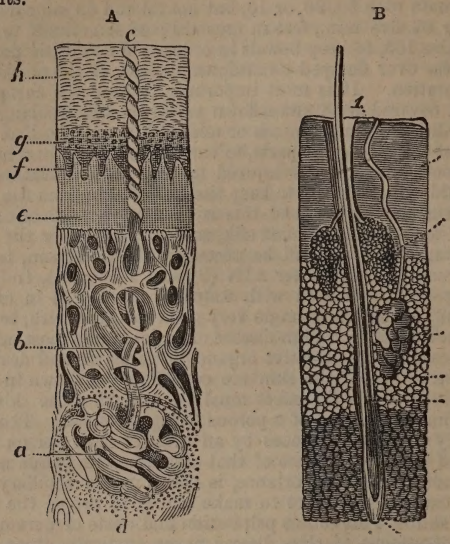
SKIN DISEASE.—We have had many cases of long standing, and in every case where the patient would give the necessary time, and conform to the rules of treatment, they have been radically cured. Several cases have been from ten to twenty years affected. Persons going to a medical man for such a complaint are told of such a variety of skin diseases that they are as much puzzled as the doctor what to think of the matter. The fact is that, for want of circulation of nutritive blood in the skin the parts become dead, dry, and scale off; or from stoppage of the capillary circulation, the blood in the fine arterial veins called capillaries, becomes venous, then morbid, causing sores and sloughing. Acting on this theory, we have invariably seen the most obstinate cases, described by various scientific terms, thoroughly cured. The leading points we look to for cure are treatment to raise the general health; diet of a simple kind, avoiding all stimulants, tobacco, animal food, coffee, pickles, and any food not easily

digested; no medicine or lotions of any kind. A single dose of the simplest purgative will immediately arrest the progress of cure. Our general treatment is, on rising, Bath list 13, 130, 96 or 10, or 35 or 52; 59 twice or thrice per week, according to strength of patient; 39, with 96, or 10, every day, or every other day, alternate with 59, 96, or 10, but not 39 and 59 same day; 87 five min. once per day, or 92 five min., feet in mustard; 48 sometimes, to keep the liver acting, or 49; also 165, to keep bowels in order. When crisis done discharging, have flannel dress over damped swansdown instead of the mackintosh, to allow more free evaporation. It is most important to keep the surface of the body, where affected, covered with swansdown calico or silk webbing, wrung out of tepid water, with jaconet mackintosh or oiled silk over the calico. The object is to keep up moist warmth to the parts, to encourage vitality, and bring circulation of nutritive blood to repair the injured tissues. When Nature has done her work, care should still be taken to keep the tender skin from the air until it has had time to form and harden, and this is done by the use of our crisis calico, leaving off the mackintosh or oiled silk, as described under the head "Crisis." If in winter, warm clothing will be necessary all the season, to give the skin power to fully recover. The letter AIN (Special Treatment, Index) good.

TREATMENT.—233 sprinkled with water in night, 234 in day, or 236. If above too hot, 220 under the spongio very good to begin with, to stimulate the bowels and liver to action. Skin disease often leads to a most miserable state of suffering, to disease of the nutritive organs, to paralysis, and death. When the functions and structure of the skin are considered, as shown in the cut, it may easily be conjectured what the effect must be of having the skin a covering of dead scaly parchment, instead of a porous living envelope. The 2 lbs. of waste thrown off every twenty-four hours by an average-sized person is forced upon the kidneys, and brings on disease of that organ, besides poisoning the stomach; and last, but not of least importance, is the impeded capillary circulation of arterial blood, causing the heart to make efforts to propel the blood into the hardened scaly skin. This causes palpitation and waste of nervous power. The usual medical treatment of skin disease never eradicates it or accomplishes a radical cure. Our plan always does so; and we have the most gratifying recollections of having been instrumental in curing skin disease of ten to twenty years' standing, and rendering life a pleasure which before was of continual misery. We denounce all medicine, or mineral waters, or ointments, or lotions, except in case of itch (see article "Itch"); but rigid and patient attention to the means of cure, and to diet and habits of life, is absolutely necessary, and to clothing in cold weather for a considerable time after cure, to get the skin into a vigorous condition (see Skin Disease). Now, three years since, the poor sufferer is in misery, and with his great wealth, and the first M.D.s of the day, he was getting worse. He knows of our treatment, but prejudice in favour of the high M.D.s had more influence with him than reason. The use of Turkish baths was tried, and found to weaken the skin, and we have long since given them up. Our spirit lamp 59 occasionally is best, but we do not think it good to sweat the skin much. Our 38, 46, or 52, with the other treatment above-named, and above all the envelopes and bandages, bring circulation of arterial blood best into the skin, which alone can restore the skin to its natural vigour.

Besides the liver, lungs, and kidneys, other organs act as purifiers to the body. The skin, with its three thousand pores to every square inch, throws off from an average-sized person two to three pounds of impure matter every twenty-four hours by insensible perspiration. There are, it is supposed, on an average, twenty-eight miles of these minute corkscrew-like ducts or conduits to let out the perspiration (see cut of skin). Then there are as many pores called absorbents, to the minute capillaries, to give them oxygen and to cause combustion of innutritious matter. Hence the necessity of breathing pure air, and keeping the skin cleansed of dirt and excretions, which otherwise would be re-absorbed

and also the necessity of having under garments frequently washed, or they will become charged with this fetid matter, and will restore it back to the system by the absorbents.



SECTIONAL CUT OF THE SKIN, HIGHLY MAGNIFIED.

A is a sudoriferous gland; *b c*, the duct which comes out on the surface of the skin in a spiral form; it is calculated that there are seven to eight millions of these in the skin of the human body, measuring a total length of 28 miles, and they throw out about 2 lbs. in insensible perspiration every 24 hours, besides what comes away by active perspiration; *d*, the sub-cutaneous cellular and adipose tissue; *e*, the derma; *f*, the papilla; *g*, the rete mucosum; *h*, the epidermis.

Sebaceous and sudoriparous glands of the skin. 1, the thin cuticle; 2, the cutis; 3, adipose tissue; 4, a hair in its follicle (5); 6, sebaceous gland opening into the follicle of the hair by an efferent duct; 7, the sudoriparous gland, through which the perspiration passes outwards.

Fig. A shows the corkscrew pores of the skin, computed at eight millions in a human body, and twenty-eight miles in length; these discharge from two to three pounds of waste matter in twenty-four hours. B is a magnified section of the skin, showing the position and growth of a hair. An ordinary sized body should throw off two pounds of waste every twenty-four hours through these pores, showing the necessity of washing the skin.

SHINGLES.—Treat as for crisis (Bath list), 64, 141—38, 51, 50, 141—163, 220, 169¼, and is easily cured.

ERYSIPELAS is simply and solely congestion of the capillary arteries, which our treatment so quickly cures by relieving the congestion and setting the circulation free. Doctors' remedies are the very contrary, and destroy life in thousands of cases, which would be easily saved by the following treatment:—

ERYSIPELAS.—Apply 58 Bath list often during the day, one hour at a time, and after the sponging put on a piece of spongio-piline over the part affected,

damped with tepid water; or, if no spongio-piline is procurable, then apply a piece of linen doubled and well wetted, and then a dry bandage over of mackintosh or flannel. If the attack is severe, fomentation to the parts should be used for a quarter of an hour; and then apply the above process of sponging and packing, afterwards frequently repeating till the fever is gone. Constitutional treatment should also be used, such as a warm dripping sheet on rising; fomentations on the bowels a quarter of an hour at night (not too hot), wearing the body bandage 168¾, 174, 172. A fomentation pack instead. The face can be steamed by holding it over a vessel of boiling water, and covering of flannel or blanket to keep steam to face and head; this is essential and very effectual, but protect face from the air after steaming. *Fasting* is a great help to the cure of this disease, only taking cold water, or toast and water, or arrowroot, with now and then a little piece of bread, until convalescent. We always, and easily, subdue this formidable complaint by our Hydropathic practice.

SPINAL DISEASE AND INJURIES OF THE SPINE.—When real organic disease of the spine has taken place, either by the strain of the back or a blow, or from effects of diseases which more particularly affect this part, little can be done, and that only to alleviate. I have not known one entirely recover. I say this to warn persons from those experiments which are so often tried, and which I have known end in total paralysis of the limbs. Females not unfrequently complain of pain and weakness in the spine, especially in the lower part, which has in reality no relation to disease, but proceeds from internal operations of nature peculiar to females, and which is removed by judicious treatment of the sitz bath, bandages, and general attention to the health. Many such symptoms in females are, however, treated as disease, or affection of the spine, and cause permanent injury, and in several cases we have known, death has resulted from medical experiments; we have had such cases from the hands of eminent physicians.

First, where there is known injury to the spine, we use the spinal compress and linseed poultice day and night, until it brings out a crisis, and also the body bandage partially; very gentle fomentation to the spine (not hot) for one hour, and then sitting on a sitz bath, and washing the spine gently with the hand for one or two minutes, with water nearly cold. Legs put up to the calves in hot mustard and water ten minutes; this not more than once a day.

Gentle spinal rubbing, or 121, 123 Bath list, is good; but any application which strongly stimulates or shocks the nerves must be avoided: the nervous centres will not bear it. Keep in a reclining position as much as possible, and adopt the simple diet recommended in this work. All stimulants, narcotics, and tobacco are bad; much flesh meat to be avoided; anything that is heating is highly injurious. Warm clothing should be worn in cold weather, as the nervous vitality of the whole frame is greatly lowered. Should the patients be induced to use lotions, blisters, or setons, they will certainly repent, but, having once used them, regret will be of no avail. We have had previous hopeless cases get quite strong and well. If the 186 spinal compress does not keep warm, use spongio-piline. We have the pleasure of recollecting many cases, condemned by the doctors to a life laying on the back, who have been thoroughly restored to health and strength at our Institution. My head bathman for many years, Henry Ward, formerly worked in the stone quarries near Lea Mills; a large stone fell upon him and crushed his spine, and rendered him unable to walk, after a time he applied to be admitted to my hospital, where he got thoroughly well; and from being a common quarryman he has now a prosperous hydropathic establishment, his own property. John Ballington, mason, Matlock Bank, had a similar injury; he was disabled for two years, but by our treatment he got thoroughly strong, and has been sent to treat many dangerous cases in various

parts of Great Britain. The daughter and niece of one of our influential M.P.'s were both laid on their back, from what doctors term spinal disease, and without hope of, or indeed probability of, recovery, came under my wife's treatment, and are now hearty and strong. These are only individual instances of rescue from a painful and short life; all doctors' so-called remedies not only do not cure, but inevitably and certainly aggravate the mischief. Our plans are soothing and invigorating; theirs what they term counter-irritation, or rather torture.

SPINAL SLAPPING.—This we find of great use in healthily stimulating the great nervous centres in the spine and brain. In cases of congestion of brain and general nervousness, let the patient sit on a board over the sitz bath, either with or without the feet being placed in mustard and water, of 100 deg. heat. The attendant then dips the hands in cold mustard and water and applies it down the spine; gently and quickly slapping with the open hand, one hand following the other from the nape of the neck all the way down the spine; frequently dipping the hand in the mustard and water, the mustard not to be washed off, but the back wiped dry with a towel; the top of the spine should have extra rubbing. The whole operation to last from four to six minutes at a time. (See bath list 127.)

A gentleman aged 56, rather stout, in the habit of driving from his city business to his country house, got cold in the back of the neck, brought on neuralgia. The usual anti-vital treatment was applied; blisters to reduce the inflammation, when, in fact, the redness was only congestion of the capillary arteries and nerves. The usual consequences ensued, of further congestion and painful swelling; then opiates used to allay pain, and consequent further lowering of the vitality; then the spine felt the effects of this war against life. The muscles became relaxed, and could not support the head erect. He came to me in a most pitiable state, his head resting on his shoulder and every motion agonising. Bad as he was I could assure him of restoration; and by our comforting means to the part, fomentations 220, spongio, our 79, and stimulating his digestive organs with our stomach and liver packs, and the skin with 59, 13, 10, abstinence from all stimulants and medicine, we got him quite well, and restored to the enjoyment of life. His son was cured of a tumour in his side at the same time, which would have destroyed him. I had a similar case to the father's. Patient's head on his shoulder seven years; worn to a skeleton. Got quite well.

BROKEN HEARTS is a strange and unprofessional term, but nevertheless hearts are broken and done to death by thousands, and in thousands of cases the cause of death is the medical attempts to cure. We have had extensive experience in this subject, and we can look back with the greatest gratification to having rescued many of our fellows from a painful death, and who have been restored to health of body and mind, and enabled to bear the vicissitudes of life with fortitude, and live in enjoyment of life, by our treatment; many with suicidal mania have recovered the full command of their reason and their physical powers. When a person has a mental shock or gradual corroding care, the life in the organic nervous system, which is the cause of nutrition and action of the liver, and all the nutritive organisation, is lowered; the food is not properly digested in the stomach, and the whole process of digesting is lowered, but above all, the power of the liver to purify the blood and take out the gall, which, if left in, circulates in the delicate tissues of the brain, causing the most wretched depression and despondency. Now, the way the medical profession prescribes for such cases is thoroughly contrary to Nature's laws of restoration. Good living is prescribed, when, in fact, the stomach and liver have not power to assimilate any but food of the simplest kind; and as to the administration of tonics or stimulants, it is simply adding mischief to mischief. The fact is, the heart's action is oppressed and distressed by congestion of the liver, and other digestive organs, or the brain, and so the poor sufferer dies of what is termed heart disease; and we have had the great pleasure to see the con-

gestion removed by some of our simple applications. (See Bath list 64, 141, 69, 141, 48, 131½, 51, 50, 141, 115, 115½, 115¾, 168¾, 200, 169¼ night, 234 day, all slightly sponged; or 236 in day, avoiding all stimulants or medicine of any kind.) We know now persons in perfect health, and happy in a useful sphere, full of energy and enjoyment of life, brought round by these means, and we have seen others sink in misery, who might have been saved but for their obstinate, unreasoning attachment to the ancient institution of medicine.

HEART DISEASE.—Many patients have come to our Establishment under the impression they had disease of the heart; some have been told so by their medical attendants (as was the case with myself some years ago, when I consulted an eminent surgeon in London). Except in rare cases, my patients have found, as I did, that when the liver was got to act well, and the general circulation regulated by our soothing and invigorating applications, and the passages opened for the easy flow of the blood through the liver and other organs, there was no trace of heart derangement. Many are very unnecessarily alarmed at some irregularity of the pulse, and palpitation. All dyspeptics and nervous subjects are liable to occasional functionary disturbance of this kind; but where actual disease of this organ has taken place, nothing can be done but to mitigate its effects; and this may be accomplished to a greater extent by mild hydropathic treatment than by any other course. We have had some serious and distressing cases of this kind, and in none have we failed to give some relief. The treatment, of course, has to be varied according to the strength and age of the patient and the causes which have brought on the disease. First, the diet is a matter of urgent necessity. See to avoiding anything that is at all difficult of digestion or of a stimulating kind. Little flesh meat should be taken, and that should be lean mutton, fowl, or game. Avoid beef, and specially hot beef; a little lean cold meat is good, with a little mealy potato, asparagus, or cauliflower, but no greens, turnip, cabbage, nor any uncooked or fried vegetables; farinaceous puddings good, as semolina, vermicelli, or light flour puddings, with a little stewed fruit, and water to drink; bread should be taken in a moderate quantity at one time, as it swells on the stomach; buttered toast and cakes are bad.

If persons with heart disease have not the strictest and most determined resolution to take food with a view to the nutrition of the body alone, and without regard to indulging the tastes and appetites, they are continually in danger of sudden death from eating to repletion; great numbers die from want of this resolution and self-denial. I have known individuals well aware of having this malady, and of their danger, who, unwilling to resist the cravings of the appetite, have passed from their business or quiet fireside, or their luxurious drawing-rooms and social circle, into eternity. Those who are left behind inter the body, leaving the soul to the mercy of God, and go on in the same course; some of them to die of heart disease, others of sudden inflammation, dropsy, brain attacks, apoplexy, &c.: not a few of such instances I can now call to mind amongst those whom I formerly joined at table. If any person should read this who has any symptoms of over-feeding, palpitation of the heart, fulness in the head, &c., let them at once make a resolution to discard all but the plainest food, and reject stimulants, tobacco, &c., *in toto;* and, where it is possible, avoid all excitement of business—cold also is injurious. Several cases who have been with us for a time to have their general health improved, and to learn our treatment and practise our dietary, have gone to Torquay for the winter, where, without having a relaxing climate, they have been able to move out in the open air almost every day throughout the season. This is a very important consideration, as when there is any deficiency of the heart's action the want of oxygen in the blood is manifest by the blueness of the lips and countenance. I have a case in my mind now of a gentleman, aged 65, who has been several times with us for affection of the heart, and whom I had great difficulty to persuade to spend the winter at Torquay; but last autumn I pressed the matter upon him so strongly

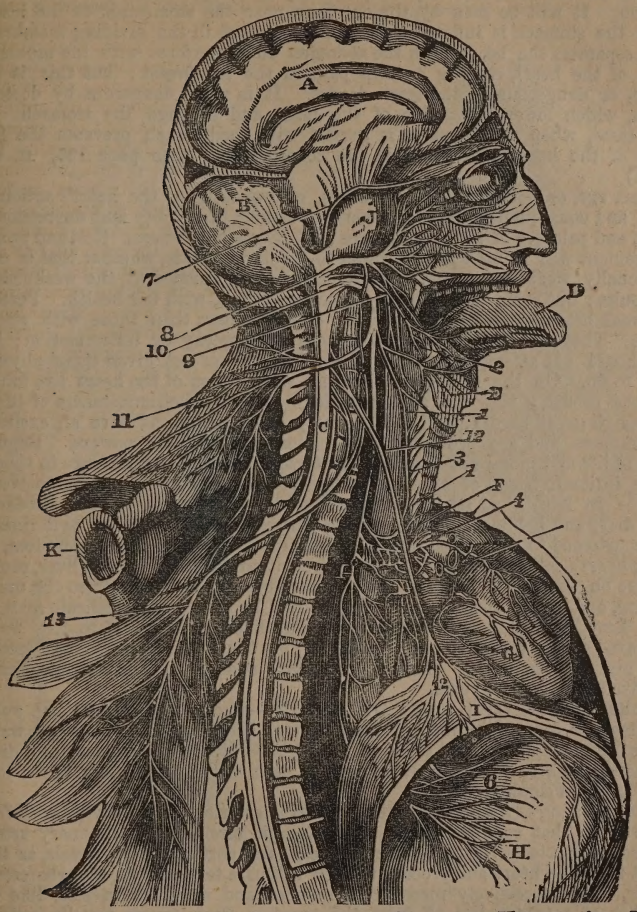
that he decided to try it, and the result is that now, when the winter is pretty well over (April), he informs me he has not had such a good winter for many years.

As to the hydropathic treatment of heart disease.—The object that must be aimed at is to draw away from the heart the inflammatory action and the pressure on the weakened vessels, and infuse new life into the muscles. This must be attempted by the gentlest means; as it will be obvious to any ordinary observer that the heart, having to receive and pass through it about a hogshead of blood in the twenty-four hours, the wonder is that it stands its work at all. The blood has to be forced by powerful action through these often weak or stiffened valves and muscular cavities. They are obliged to do their work as long as life lasts. Not one minute can the often almost disabled ventricles and auricles rest from their labour. They must open and close to admit and send out again the blood which comes to the heart by the clavicular artery, to be propelled with force into the lungs, to come in contact with the air to take its life-giving property, oxygen. We see the effects of the same disease on the muscles in the legs, knees, arms, and wrists being weakened, hardened, or contracted; and those who are in that condition feel the pain of working them in that state. Now in a similar way the powerful muscles of the heart become stiffened, contracted, and inflamed, and when this amounts to a certain degree, the heart stops, and the person dies. I can only of course give, as I have before said, a general idea of the treatment; as it will be varied according to the strength or age of the subject. We first insist upon our plan of diet and rest from the harassing cares of business.

In the morning before rising, and whilst the patient sits up in bed, give the upper part of the body a gentle rubbing with a towel wrung out of water 80 degrees, then dry this part and put on a woollen vest, and let the lower part of the body be done in the same way; and put on woollen drawers, for it is of importance to keep the lower part of the body warm. In the forenoon, have legs up to the calf put into 90 degrees mustard and water, and gradually raise the temperature to 100 or 105 degrees, if the patient can bear it, keeping the head wet with cold water whilst the legs are in the mustard and water, and remain so for from five to ten minutes; and then let the legs and feet be rubbed over with a towel dipped in 80 degrees water, and dry rubbed with hand till warm. Afternoon, have the feet put into 90 degrees mustard and water for three minutes, then give stomach pack 50 Bath list, wringing the towel out of 90 degrees water, and keeping a hot foot-tin to feet; lying thus for three-quarters of an hour, but if restless, then only twenty minutes; then on coming out, sponge over the part packed only. Bedtime, apply a mustard poultice just *below* the heart, and keep it on till the part becomes red, then wipe it off dry. See 232, 104 Bath list. Chillie paste, gently rub over left side morning, noon, and night.

A piece of spongio piline worn on the heart, and kept damp with *hot* water, is very useful, if it does not bring on irritation; we have used this in cases with good effect. The reader will see in all the above treatment great care must be taken that none of the applications produce a *shock*. Frequently sipping cold water will be a great assistance to the benefit of the treatment. During syncope or faintness, it is best to undress the person immediately, and apply a mustard poultice to the heart, and put the feet into mustard and water 100 degrees, and if possible the hands also; then dry them well. Rub the other parts of body whilst the person is wrapped in a blanket, sponging head and face with cold water, and giving sips of cold water to drink. When the attack is gone over, let the person recline and put mustard poultices on soles of feet and a warm (not hot) fomenting pad to the lower part of the bowels, keeping the head wet and the rest of the body very warm; hands should not be washed in cold water, and in cold weather wear gloves continually.

See article, Index: "The Physiological Position of Alcohol," how it affects the heart's action.



PLAN OF THE NERVES OF RESPIRATION, STOMACH, HEART, &c.—FROM Sir C. Bell's "Anatomy of the Human Body."

'A. Cerebrum.—B. Cerebellum.—CC. Spinal Marrow.—D. Tongue.—E. Larynx.—F. Bronchia.—G. Heart.—H. Stomach.—I. Diaphragm.—J. Pons Varolii.—K. Glenoid cavity of scapula or shoulder-joint articulation of blade-bone.—1. 1. 1. Par Vagum, arising by a single set of roots, and passing to the larynx, the lungs, heart, and stomach.—2. 2. Superior laryngeal branches of the par vagum.—3. Recurrent or inferior laryngeal of the par vagum.—4. Pulmonic plexus of the par vagum.—5. Cardiac plexus of the par vagum.—6. Gastric plexus or corda ventriculi of the par vagum.—7. Fourth nerve, a branch of this system to the trochlearis muscle.—8. Respiratory nerve or portio dura to the muscles of the face, arising by a series of single roots.—9. Branches of the glosso-pharyngeal.—10. Origins of the superior external respiratory or spinal accessory nerve.—11. Branches of the last nerve to the muscles of the shoulder.—12. 12. 12. Internal respiratory, or the phrenic to the diaphragm. The origins of this nerve may be seen to pass much higher up than they are generally described.—13. Inferior external respiratory to teh serratus magnus.

HEART DISEASE is very rare, contrary to the prevalent idea that it is so common. It will be seen by the cut how near the stomach is to the heart. When the stomach is inflated with wind, it presses in the dividing membrane which separates the heart from the abdomen and interferes with the muscular action of the heart, causing a sharp pain in the left breast; but this is not disease, or dangerous in the least degree. It is made dangerous by doctors' opiates, which lower the action of the heart and derange the stomach. In other cases, when the stomach is gorged with food, which prevents the free action of the heart, and death is the consequence. (See page 125, H. G.; also F.)

From age, or constitutional weakness, or over-fatigue, the heart's action is feeble, and consequently there is a general feeling of debility and depression of spirits, and paleness of the countenance; but this is not disease. Rest and proper management will bring a person round to his normal state, whether that is constitutionally weak or strong. Persons are often alarmed at the weakness of their pulse; but some have naturally weak pulsations, with fair health. Persons with weak heart action live as long, and oftener longer, than those with strong action. They are not so liable to attacks of apoplexy or inflammation; but they should not attempt exertions which Nature has not given them physical power to do. On the whole, persons with weak action of the heart live longer than the robust, if they are not compelled by untoward circumstances of life to go through great hardships; but frequently delicate persons have an excitable temperament, and are prompted to exertion beyond their powers. Regular habits of life and moral restraint are, of course, of far more importance to them.

An intimate friend of mine, now deceased, had a herculean frame, never a day's or an hour's bad health until about sixty-four years of age; moderate rules, diet, and habits; but from failing powers of the liver to act as formerly, and accustomed to such good health, disregarded this unpleasant symptom, his strong heart's action, in trying to force circulation in the congested liver, caused pressure on the brain. Some of the fine membranes gave way from the undue pressure, and caused apoplexy and death. Had he been a more delicate man, he would have given way, and been saved. Our liver pack, 48, Bath list, would have saved such a case with one application; but the doctors' calomel and leeches killed him in a few weeks. Such a frame, with such good habits of life, should have lived to 90 or 100 years.

IRRITATION OF HEART OR BRAIN.—Ladies' sitz, with 88 deg. water, for fifteen to twenty minutes. Keep feet on flat tin filled with hot water, without removing shoes and stockings; hold hot-water bag to stomach over dress, and have a 220, sprinkled, kept on nape of neck during time; use 25 to loins and thighs on coming out.

The following is from Dr. Smith:—"All the arteries of the body proceed from two trunks; that connected with the pulmonic circle—the pulmonary artery, and that connected with the systemic circle—the aorta. These vessels, as they go out from the heart and proceed to their ultimate termination, are arborescent, that is, they successively increase in number and diminish in size, like the branches of a tree going off from the trunk. Each trunk usually ends by dividing into two or more branches, the combined area of which is always greater than that of the trunk from which they spring, in the proportion of about one and a half to one. As the branch proceeds to its ultimate termination it divides and subdivides, until at length the vessel becomes so minute that it can no longer be distinguished by the eye. These ultimate branches are called capillary vessels, from their hair-like smallness (Fig. 119, 4); but this term does not adequately express their minuteness. It has been stated that the red particle of the blood, at the medium calculation, is not more than the three-thousandth part of an inch in diameter; yet vast numbers of the capillary vessels are so small that they are incapable of admitting one of these particles,

and receive only the colourless portions of the blood. Every portion of an artery, by reason of the elasticity of its coats, preserves nearly a cylindrical

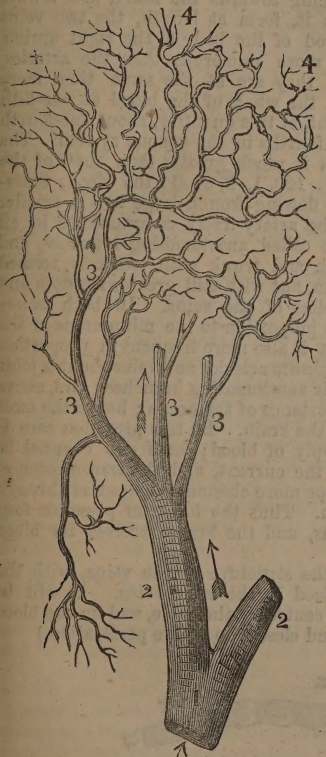


Fig. 119.

View of the manner in which an artery (*containing the scarlet, nutritive blood*) divides and sub-divides into its ultimate branches. 1, trunk of the artery; 2, large branches into which it sub-divides; 3, small branches, successively becoming smaller and smaller, until they terminate in, 4, the capillary branches.

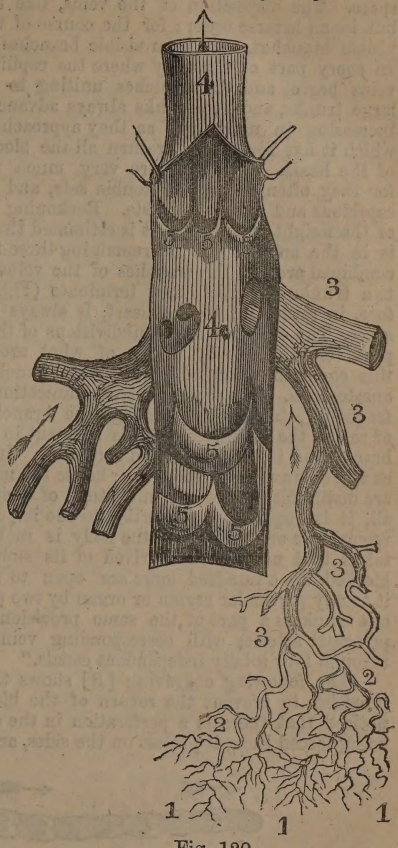


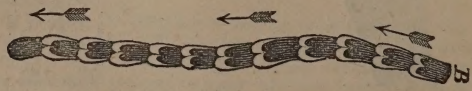
Fig. 120.

View of the manner in which the minute branches of the vein (*containing the exhausted blood*) unite to form the larger branches and the trunks. 1, capillary venous branches; 2, small branches formed by the union of the capillary; 3, larger branches formed by the union of the smaller, and gradually increasing in size, to form the great trunk; 4, a portion of which is laid open to show its inner surface and the arrangement of, 5, the valves formed by its inner coat.

form; and as the area of the branches is greater than that of the trunks, the blood, in proceeding from the heart to the capillaries, though passing through a series of descending cylinders, is really flowing through an enlarging

space. The disposition of the veins, like that of the arteries, is arborescent, but in an inverse order; for the course of the veins is from capillary vessels to visible branches, and from visible branches to large trunks (Fig. 120, 1, 2, 3). In every part of the body where the capillary arteries terminate the capillary veins begin, and the branches uniting to form trunks, and the small to form large trunks, and the trunks always advancing towards the heart, and always increasing in magnitude as they approach it, form at length, the two veins which it has been stated, return all the blood of the body to the right auricle of the heart. The veins are very much more numerous than the arteries, for they often consist of double sets, and they are at the same time more capacious and more extensible. Reckoning the whole of the blood at one-fifth of the weight of the body, it is estimated that, of this quantity, about one-fourth is in the arterial and the remaining three-fourths in the venous system. The combined area of the branches of the veins is much greater than that of the two trunks in which they terminate (Fig. 120, 1, 2, 3, 4): the blood, therefore, in returning to the heart, is always flowing from a large into a smaller space. The divisions and subdivisions of the artery freely communicate in all parts of the body by means of what are called anastomosing branches, and this communication of branch with branch and trunk with trunk is termed anastomosis. The same intercommunication, but with still greater freedom and frequency, takes place among the branches of the veins. In both orders of vessels the communication is frequent in proportion to the minuteness of the branch and its distance from the heart. It is also more frequent in proportion as a part is exposed to pressure; hence the minute arteries and veins about a joint are distinguished for the multitude of their anastomosing branches; and, above all, it is frequent in proportion to the importance of the organ; hence the most remarkable anastomosis in the body is in the brain. By this provision care is taken that no part be deprived of its supply of blood; for if one channel be blocked up, a hundred more are open to the current, and the transmission of it to any particular region or organ by two or more channels, instead of through one trunk, is a part of the same provision. Thus the fore-arm possesses four principal arteries with corresponding veins, and the brain receives its blood through four totally independent canals."

(The following engraving [*B*] shows the structure of the veins, with the provision to prevent the return of the blood in the same veins. It will be noticed that there is a perforation in the centre of the valve, and on the blood being forced back, it presses on the sides, and closes the centre perforation.)



"The veins and absorbents have not, like the arteries, an impelling engine, as the heart, to force forwards their contents; therefore they need and have the auxiliary means of valves. The arteries have no valves, because they receive the impulse of the heart, with which they are connected at their outset with the aorta. They have, besides, an inherent power of circulating their own contents, arterial blood, which is the oxygenised, nutritious, and scarlet-coloured vital fluid." The causes of inflammatory congestion of the brain, varicose veins, and bleeding piles, all originate in the want of power in these valves to propel the venous blood forward, or to obstruction in the liver; or, when the colon is full of hard fæces, the venous blood cannot be propelled. The heart goes on propelling arterial blood through the free arteries, and the consequence is bleeding

piles from rupture of these veins. Apoplexy also takes place from the same cause, or from obstructing circulation of the serous and lymphatic absorbents. Our treatment raises the nervous power of these valves, and soon stops inflammation.

ATTEMPTING TO GIVE SLEEP AND RELIEVING PAIN BY OPIATES.—I have frequently observed the effects of medical practitioners combating active disease and excruciating pain by giving repeated doses of morphia, which, they are perfectly well aware, can only stupefy the nervous sensibility, but can have no possible restorative properties; nor do they expect any from their use. I have known cases kept under the influence of narcotics until death has released the patient, when, by our active foment packs 47, 64, 141, and our 168¾, 220, 169½ compresses, &c. &c., I could have been perfectly certain of equalising the circulation of the body, and so effectually and naturally relieve the suffering organs. The medical practitioner thinks sleep must be had on any terms, therefore allays pain by stupefying the nerves of sensation; but, in doing this he sacrifices the only chance of recovery for a mere temporary alleviation. We never do this, but wait till natural sleep is obtained by our natural gentle means, and we never fail.

SLEEPLESSNESS.—Try which of the following answers (see Bath List) :—128½ then put on a thin, soft calico cap, lay on the right side, and keep hot water bag or pillow to stomach. Wear merino or woollen stockings over cotton socks, damped only on sole of foot; have hot foot-bottle bottom of bed, but not to touch the feet. Another plan: Use 12½, then put on 215½, and have a pillow filled with hops, steamed or dry, to sleep on, and 153½, against bare feet, and sleep in 163, 172. Another: Give 73, then lay a small 220 over stomach, under 169, and use 130; then a damp wash-leather cap on, and 195. Another: Give 13½, then dry woollen stockings or stocks, no bandages if inclined to perspire. Another: Give 92 and 132 together, then 25 over stomach and spine, and put on 186 and 166, and pin a small 220 to top of 186, so as to lay on nape of neck. (See effect of Bromide of Potassium, Epilepsy, Index.)

POSITION IN SLEEPING.—It is better to go to sleep on the right side, for then the stomach is very much in the position of a bottle turned upside down, and the contents of it are aided in passing out by gravitation. If one goes to sleep on the left side, the operation of emptying the stomach of its contents is more like drawing water from a well. After going to sleep, let the body take its own position. If you sleep on your back, especially soon after a hearty meal, the weight of the digestive organs and that of the food resting on the great vein of the body, near the back-bone, compresses it, and arrests the flow of the blood more or less. If the arrest is partial, the sleep is disturbed, and there are unpleasant dreams. If the meal has been recent and hearty, the arrest is more decided, and the various sensations, such as falling over a precipice, or the pursuit of a wild beast, or other impending danger, and the desperate effort to get rid of it arouses us, and sends on the stagnating blood; and we wake in a fright, or trembling, or in perspiration, or feeling exhaustion, according to the degree of stagnation, and the length and strength of the efforts made to escape the danger. But when we are not able to escape the danger—when we do fall over the precipice, when the tumbling building crushes us—what then? *That is death!* That is the death of those of whom it is said, when found lifeless in the morning, that 'they were as well as they ever were the day before;" and often it is added, "and ate heartier than common!" This last, as a frequent cause of death to those who have gone to bed to wake no more, we give merely as a private opinion. The possibility of its truth is enough to deter any rational man from a late and hearty meal. This we do know with certainty, that waking up in the night with painful diarrhœa, or cholera, or bilious colic, ending in death in a

very short time, is properly traceable to a late large meal. The truly wise will take the safe side. For persons to eat three times a day, it is amply sufficient to make the last meal of cold bread and butter, and a cup of some simple drink.—*Hall's Journal of Health.*

WEARING MUCH HAIR, especially at the back of the head, is injurious to any with much mental employment, or to delicate persons. I have frequently noticed this in the case of ministers of the Gospel; it often causes suffering without their being aware of it.

WHITLOWS.—When the first indication of inflammation appears on the fingers or toes, if the hand or foot is then well steamed for fifteen or twenty minutes twice a day, the whitlow will be prevented coming forward in most cases. Experience has proved this; but if the whitlow does advance, then take a small glass or jar, and fill it with hot water, and keep the part affected completely immersed in the water constantly till well, reducing the heat of the water according to the state of inflammation; this will entirely remove all pain, and in a few days a perfect cure will be effected. When inconvenient at times to keep it immersed, have a spongio piline hottle ready, and when taking it out of the water, put a piece of linen well wetted with hot water on the wounded part, and the spongio hottle also well wetted with hot water, over the wet linen; but in a little time the throbbing pain will be again felt, and the immersion will be found the only painless way of cure.

Case No. 11. WHITLOWS.—A gentleman, age about forty-four, fair constitution, gradually got into a dyspeptic state from confinement to business; and as Nature will try to throw off the internal mucous irritation on to some part of the body where the blood-making processes are not going on, a slight hurt of the hand determined the crisis to that part, and defied all attempts of his surgeon to cure it; the hand gradually got worse, and whitlows came, with severe inflammation. The patient then tried Hydropathy; but the application being cold, and more with a view to raise the vital powers by tonic treatment, that also failed to cure the arm and hand, although the general health was much improved, and the bowels acted without aperients, which had not been the case before. The consequence of raising the general health was seen in an attempt by Nature to throw off inflammation through the leg by crisis; but when the hydropathic practitioner observed this, he was alarmed, telling the patient that he must endeavour to stop it, as he had quite as much as he could bear with the crisis in the hand and and arm. The leg was kept cool, and all warm treatment avoided, and the crisis which was appearing kept back; the hand and arm became proportionably more inflamed and painful, and after being under cold water treatment from February to June, he came to me in a very suffering state; the hand and arm highly inflamed and painful, the hand red as fire, and not able to bear touching; his stomach and whole frame getting worse, as the constant pain irritated the nervous system. I immediately applied steaming to both hand, arm, and leg, packing the hand, baths 13 and 10, and 28, 46 once, and 38, 51, 59, 90, according as he had strength to bear them, 163½, 172, 208, 207. Crisis soon came on in the leg, and very soon began to relieve the arm and hand—taking a share in the purification of the system. Nature prefers carrying off the inflammatory matter in the system at the farthest points from the trunk, and so we rarely have crisis in the arms, except there has been some recent or remote injury. The patient was now put under evaporation, No. 147, for both hand and arm; the hand constantly covered with a silk glove, never removed, and kept in the tepid water; and if at any time particularly painful, increase the temperature of the water to 90 degrees. No. 10 was now given, with 13 every other day, as he could not bear cold, on account of crisis; No. 107 forenoon and evening, and 39 twice a week. This treatment answered completely.

TREATMENT FOR SLEEPLESSNESS.

The patient should try each of the following till he finds which suits best (see Bath List for numbers):—

128½, and then put on a dry crisis calico cap; lie on right side, and keep

water-bag, with a little hot water, against stomach. Wear merino stockings over cotton socks, damped only on sole of sock; and have a foot-bottle at bottom of bed, but not to touch feet.

Use 12½, and then put on 215½, and have a nicely steamed hop pillow, or a little warm water put into small mackintosh water-bag, and 153½ against bare feet, and sleep in 163 and 172.

Give 73, and then lay a small 220 over stomach, under 169, and give 130, and then a damp wash-leather cap on, and 195.

Give 14, and then dry woollen stockings or socks, and no bandages. If inclined to perspire, use a little vinegar in water, and sleep in 198½.

Give 92 and 132 together; then 25 over stomach and spine, and put on 186 and 166, and pin a small 220 to the top of 186, so as to lie on nape of neck.

THE LATEST DISCOVERY FOR STUPEFYING THE POOR BRAIN.

What with the discoveries of terrible instruments of war, and the far more destructive inventions and discoveries of doctors for the destruction of mankind, or their imbecility and suffering, it is only a wonder mankind exists in what is called this high state of civilisation. Whenever the doctor's patient cannot get natural sleep, he administers destructive compounds to stupefy the brain, and calls it sleep; but that it is not so the results prove, often in the death of the patient: as in the case of the Prince Consort and Lord Chesterfield, and innumerable similar cases.

THE BLOOD AND THE HEART.

Dr. Rutherford, F.R.S.E., in his second lecture on the Circulatory and Nervous Systems, given on Tuesday last, resumed the consideration of the constitution of the blood. He described how the corpuscles are continually changing—the colourless becoming coloured, and the coloured passing away and being replaced by new colourless ones, formed in the adenoid tissues of the blood glands, and especially in the spleen and the lymphatic glands; and he showed by experiment that the corpuscles are heavier than the fluid of the blood, and that the coloured are heavier than the colourless corpuscles. He stated that the gases in the blood are—a very little nitrogen, oxygen (15 per cent. in arterial and 5 in venous blood), and carbonic acid (30 per cent. in arterial and 35 in venous blood); the oxygen being absorbed from the air in the lungs and thence conveyed to the tissues by the hæmatoglobin on the blood corpuscles, while the carbonic acid is carried by venous blood from the tissues to the lungs. The other constituents were then described, including albumen, fat, glycogen, and various salts. The ill effects of the loss of blood, such as extreme weakness, were ascribed to the slow formation of the coloured corpuscles and to the consequent diminished heat of the body, hence dropsy.

BRAIN FEVER.—We have had many severe cases under treatment, and have been successful with them. I can only give some general directions in these cases, as the attack comes on from such various causes, and requires treating accordingly; but the great point in all cases of course is to lower the excitement in the brain by derivative baths, relieving the overcharged blood-vessels in the head, and lessening the nervous excitement. In the first place, cut off the hair from the head (females may leave the long hair in front), have head bath 70 degrees, five to ten minutes, two or three times per day, and sponge the forehead while in. Mustard plaisters to the soles of the feet day and night, as long as the patient can bear them, the legs and feet wet packed (Bath List, No. 214); and when the feet are too tender, put on cotton socks wrung out of tepid water, and lamb's-wool over; have hot bottle also to the feet. Mustard plaister over the right side, in the region of the liver, till red. Fomentation back and front (No. 64 on List), twenty minutes at a time. Night and day spongio spinal compress. Wet body-

bandage, wrung out of hot water, should be used; and if it does not keep warm, put a flannel wrapper over it, as it is of great importance to keep up a good warmth in the stomach and bowels. The arms should be bandaged with wet strips of calico, mackintosh, and flannel. Towel pack (No. 45), washing the body over with hot water and yellow soap morning and evening, and sponging over with tepid water, standing on hot pad. Diet.—Cooling drink (see receipt, Index), barley water. No flesh meat, coffee, &c. If there is much exhaustion, a tea-spoonful of brandy in sago, creed in water. Soon as the patient's appetite returns, cold mutton chopped fine, with bread-crumbs; and taking water by sips, and as much as the patient desires. In some cases we have found the following treatment very beneficial:—221 as much as the strength of patient would allow, especially attending to "head" directions as there specified; and when not in 221, keep 220 on nape of neck and pit of stomach, and 215½, using vinegar with the water for head, and 153½ to feet. 130 should also be attended to as frequently as the case will admit it to be done. 231 Bath List very good; 115¼ especially good; 186, with damp spongio, six inches at top, 168¾, &c.

DELIRIUM TREMENS.—We have had many severe cases of this kind, and have been entirely successful in the treatment of them, and in delivering the patients from the dreadful propensity to intoxicating drinks—the cause of the malady. Mild hydropathic treatment very soon tells beneficially in such cases, and, at the same time that it soothes and quiets the fever, produces a counter-stimulus by acting on the skin, and relieving the irritated nerves, and allaying thirst. We have not had one failure.

The medical practitioners are afraid of cutting off at once the patient's supply of stimulants, but we are not so; and in every case have withdrawn all strong drink from the first, and have only administered a little spirit of ammonia in water, or our gazogene drink (see Index), with a tea-spoonful of brandy to a pint; but that we do not allow after a few days. Dr. Gully, of Malvern, is of the same opinion, as to the advisability and safety of withholding all stimulants at once.

The treatment must be very mild and delicate at first, on account of the brain irritation. We confine them to bed for some days, and first in the morning give 231, and in forenoon use very gentle fomentations to the bowels 64, also lazy packs No. 50 on Bath List.

CASE OF OVERWORKED BRAIN ruined by the remedies applied. A medical student of King's College, about twenty-four years of age, studying hard, paying little attention to his health, smoking cigars to soothe his nerves, and taking stimulants (but by no means more than is usually taken) to keep up his spirits. This course was followed by the natural results, congestion in the head and general uneasiness. He applied to the late celebrated Dr. Lawrence, who, according to the orthodox laws of the profession, attacked the suffering part with blisters behind the ears, cupping at the top of the spine, and salivation, by way of cleansing the blood and clearing the bowels; no doubt thinking, when he had drawn out serum and blood from the head, and made a good passage below, the whole machine would be as clear as a newly-cleansed vessel, and ready for anything the patient chose to put into it again. The unfortunate result, however, for the student (who is now in practice as a surgeon) is, that he has been losing his sight ever since the blisters drew the life out of those parts; and if he is called to any patient in haste, he is subject to a swimming in the head, that incapacitates him for immediate action. He is full of rheumatic pains, and sometimes feels difficulty in using his limbs, and a premature old age has been inflicted upon him by one of the most celebrated in his own profession. He will never regain the vitality which has been drawn out of him. He is now convinced of the soundness of the principle of looking alone to the restoration of the powers of nutrition to cure disease, and attempting the cure of a local part through the agency of the whole system. He has experienced much benefit from a partial adoption of our hydropathic plans. I was struck with a remark he made shortly after he had tried our practice and read Dr. Gully's work. "You begin," he said, "with building up; we unfortunately have to begin with pulling down before we can attempt building up." I

remarked, when once this pulling down is practised, the frame never recovers the mischievous effects. I wish he dare condemn this principle in the infirmary.

CONGESTION OF BRAIN AND PERMANENT INJURY, *from irregular living, drinking, seton top of spine, &c.*—A gentleman, age about fifty, naturally remarkably strong and robust, having had perfect health up to forty years of age, began then to feel the effects of irregular living, late hours, tobacco, wine, and spirits. Being very prosperous in his business, and a man of great energy, his naturally strong vital force kept him from feeling the extent of the mischief that was brewing. He went to the doctor when his head was a little worse than usual, or his bowels confined—got a dose of calomel, and proceeded on the course of ruination to his body. Nature bore this as long as she could, and then set both the patient's vital force and the doctor's nostrums at defiance, and the patient was laid up with racking headache, sleeplessness, and miserable nervous feelings, amounting almost to madness. A rather strong measure was now tried; a kind of combined assault on the vitality of the system, in the shape of blisters behind the ear, salivation, and an issue of three peas at the top of the spine!! Nature never recovered this blow, nor will she as long as the patient lives; a permanent and incurable uneasy feeling has been set up in the nerves of the head, which nothing can ever cure. The vitality of some of the nerves in the spine and head are all but destroyed, and so weakened that at the patient's time of life (fifty) restoration is entirely hopeless. If surgeons or physicians ever cured congestion of the brain by these barbarous applications, there would be some justification for the practice, but they never did, and never will, so long as the principles of the life of the nervous system are what they themselves have discovered, and published to the world in so many instructive and truthful treatises. This patient came to my Establishment most unwilling to have the peas taken out of his neck; he had been told that by drawing away inflammation they were his security against insanity. I told him I gave lamb and chicken with the peas I prescribed, and I should order them to be put into his stomach, where they would be far more likely to help to restore the nutritive powers of the body than being stuck in the back of his neck, producing inflammation. The peas were immediately removed, and the hole cleansed and healed up with water bandages. I had this patient several months, got his bowels soon to act quite naturally, as well as the kidneys. The tongue became clean, appetite good; he could stand any amount of baths with pleasure, could walk ten miles at a stretch with ease, and all was right but the occasional twitching at the back of the head, where the peas had been stuck in, with an almost constant sense of something was wrong there, and on exertion, communicating to the head a sort of dull, heavy feeling, although far more slight than formerly, but not preventing sleep. It was, in fact, simple weakness of the nerves from the injury. The good state of tongue, and general good health, showed the cure would have been complete but for the barbarous invention of the peas; and I expressed my wish that the surgeon had tried the effect of the treatment upon himself before he prescribed it to his patient, the same as I tried my baths and bandages, to find out by personal experience their agreeable or disagreeable effects. Absolute abstinence from wine, spirits, or beer an absolute necessity if recovery is to be gained.

NERVOUS CASE.—Captain, age 35. Great hardships at sea, long watching and anxiety; slight frame, healthy, temperate; no organic disease, stomach greatly weakened; sleeplessness. On rising 130½ with warm water, then 25, and and re-damp compresses 188, 178, 169, with warm water. Every other forenoon 59, with 137 and 130, holding warm pad to bowels till begin to sweat, then use 13 with suds, then 31, and whilst in 31 two attendants rub well, and dry rub as 19½; then dress and 77. Head pack as above. This cured him.

HEADACHE, or Heat in the Head.—Wash the head in very hot soap and water, then sponge with tepid water, and put on head bandage, No. 215 in Bath List; also 130, 131, good. But headache is mostly the result of a disordered stomach or liver. (See treatment for these ailments).

ELBOW BATH is very useful in any inflammatory action in the hand, arm, or shoulder. Put the elbow into a vessel about six inches deep, and keep it in five

minutes at a time, and repeat four or five times during the day. If the inflammation is in the arm, the water must be tepid; if in the hand or shoulder, cold; as it is not proper to put every inflamed part in cold water.

HEAD PACK FOR NERVOUS HEADACHE.—Take a strip of flannel, about four inches wide, long enough to go twice round head; squeeze half of it out of *hot* water, and let the other half be dry to bind over the wet; then put on the skull cap (see list No. 215), squeezed out of hot water, and keep renewing both of the above till pain is gone.

ALMOST EVERY DAY we hear of persons advancing in life, and with the wear and tear of the present exciting routine of business or social life, become a little poorly; the doctor is sent for to remedy Nature's failing powers, and the unnatural drugs, stimulants, sub-injection of morphia, iodine, bromide of potassium, as surely closes life in suffering and sorrow far before the natural lease God had appointed.

EFFECTS OF COMPRESSED AIR.—M. Paul Bert has drawn the attention of the Academy of Sciences, through M. Claude Bernard, to the great danger of sudden transition from compressed air to the outer atmosphere. He states that, when the compression has been carried to the extent of eight atmospheres, sudden transition is fatal to animals, and particularly to man; and that, even in cases of lower compression, the injuries, though not necessarily mortal, are very serious. It has been found, therefore, by experience, that men, having worked under a compressed atmosphere should not be allowed to quit it except very gradually, and under full precautions as to the effects produced upon them. The autopsy of animals killed by such transition shows that the spinal marrow is reduced to nearly a fluid condition. The effect is supposed to be produced by the gases becoming absorbed in the blood under pressure, and that, when this is removed, they disengage themselves with violence, disturb the circulation, and produce a sort of general paralysis.—*Public Opinion.*

COMPRESSED AIR BATH.—We have had cases come to us after having been subjected to this unnatural process, too far injured in lungs, chest, and brain to recover; and many years since we made up our minds to refuse any cases which had used this process. It is like many of the vaunted nostrums of the faculty, totally opposed to natural action and common sense, and, like opiates or tonics, may give a little temporary relief; but even to attempt that there is danger to life in trying it. The after-effects cannot but be injurious. People have only to think what must be the effect of a person being put into a chamber with the air compressed to such an extravagant degree as to distend the air-vessels of the lungs. All unnatural treatment is an outrage on nature, and cannot be done with impunity. A young gentleman, with tendency to pulmonary consumption, came to our Institution after having had a course of the air bath at a celebrated place. I did not like his symptoms. There was something unusual to me in his appearance and state, and our mild treatment had not the usual beneficial effect. He stayed a fortnight, when I discovered he had been subject to this forcing process, and I advised him to go south. I saw the foundation of tuberculous disease was laid, and of which he died. Another lady, with bronchitis and asthma, had been subjected to the same violent unnatural process at the same celebrated place. She succumbed under the effects. As to the effects of the pressure on the brain, it is calculated to, and no doubt does do, permanent injury. How is it possible any good can come of such an outrage on Nature's laws? It can neither give nutrition nor increase vitality. Our extraordinary success, without any medical education, has been in always keeping in view the delicate structure of the human frame, and when it is deranged or diseased, to use no methods but what will comfort and gradually raise Nature's powers in a natural way.

SUBCUTANEOUS INJECTION OF MORPHIA.—I have just heard of a terrible case of suffering from subcutaneous injection of morphia, which is killing the subject of it

inevitably. A lady, the wife of a rich retired man of business, had tic in the side of her face and jaw. The usual allopathic remedies were used, which only aggravated the disease, and as the doctor found himself helpless to cure, as in all other cases of the kind, he resorted to attempt to stifle sensation by subcutaneous injection of morphia. The dose has to be constantly increased, and the lady has nothing before her but a painful death. The morphia presently will pervade the whole frame, and will bring on lethargy and death. Yet the husband of this lady came to me for an injury to his limb, in agonising pain, and which, he said, the doctors could not allay a moment, and he felt he must sink under the suffering. We gave him ease the first night he came in, and got him perfectly well; yet such is the infatuation of people for doctors that he allowed his wife—or perhaps it is her rule—to go to a painful death with her eyes open.

Iodine.—This terribly destructive drug is to be dreaded. We have in thousands of cases seen its destructive effects, and in many cases it has caused irreparable mischief. A patient now in my Hospital has lost the use of one leg by having it painted with iodine for nine months in one of the first hospitals in London. He is only thirty-three years of age, married, and with a young family, but now incapacitated for life from earning a living. The drug has got into the whole of his system. Another case with a bad ankle had an injury to it thirty years ago, has lately had an accident and broken one of the small bones, now a crisis has come out, and we can detect the green slimy matter, showing the iodine has been there ever since the first accident. A lady came under my wife for sickness after every meal. My wife brought out a crisis down the spine, which exuded most offensive green slimy matter, which we well knew was iodine; but immediately the crisis appeared the sickness stopped, and she left the Establishment perfectly well. We could give thousands of instances of poisoning the body with iodine. It never can give vitality, but the contrary; and yet it is a favourite prescription with all the faculty. We have known a great number made lame for life with iodine. (See Index, Bromide of Potassium.)

Turkish Bath.—Our former several years' experience of Turkish baths has proved to us that it is not so safe to use as our No. 59 Bath List spirit-lamp. The spirit-lamp we can use freely in many cases where the Turkish bath would be dangerous to life; as while the spirit-lamp is given fresh air can be breathed, bringing oxygen into the lungs, combining with the carbon, and so burning off the waste impurities with certainty and safety. It is entirely opposed to all sound principles of knowledge of the functions of the human frame to suppose individuals with such differences of constitution and temperament can alike, and with safety, go into a room heated to 140 or 180 degrees. Many deaths have been recorded from the use of this bath, and I know many who have been seriously injured by the repeated use of such high temperature. Our sweating bath 59, we find extremely beneficial in chronic rheumatism, in skin diseases, and in a morbid state of the system, or fat, and it is always safe. It is impossible a person can go into a high temperature in a closed room without some degree of pressure on the brain; and there the blood-vessels have not room to expand as in other parts of the body, from being encased in the skull; the consequence of pressure continued is a relaxed muscular nervous power of the blood-vessels, sometimes resulting in rupture, and this state of relaxation is further prolonged by the person in the ordinary Turkish bath remaining in the hot room or in other rooms in the building for such a considerable time without fresh air.

MATLOCK BATH, FROM THE HEIGHTS OF ABRAHAM.

EXTRACTS FROM MRS. SMEDLEY'S MANUAL.

THE CROUP.—Directly the symptom is discovered, let the child's feet be put into hot water or hot mustard and water; undress it, and apply a hot pad to the chest; when this is done, then get ready a hot bath for it, put the child in quite up to the chin, just supporting the head, and keeping the head wet with cold water (or putting a cold cloth round it); well rub the child with the hand whilst in the bath, especially the chest; and as soon as it begins to perspire, then take it out, and sponge it quickly down with some water, 80 deg., as 14; then put it into a warm blanket, and foment the chest, and put a mustard poultice on the soles of the feet, or 153½. Repeat the above if the attack does not go off quickly; and after the attack, let the child wear a spongio-piline chest compress regularly for a month or two, keeping it damp at times with hot water (68 on List also useful).

MEASLES.—As soon as the child appears sickening for this disease, or any other skin eruption common to children, immediately put it into a pack (see article on "Scarlet Fever") and give it two packs a day, morning and night, till the whole body is fully covered with the rash; then stop packing altogether, and do nothing but wash the body with tepid water, twice a day, morning and night, and oftener if the rash is very irritable. Keep the child warm, but not hot; keep it quiet, but do not give it much food, but as much cold water as it likes to drink.

WHOOPING COUGH.—The first thing in the morning, foment the chest for a quarter of an hour, then put the child in a wet pack, making this difference to the general pack, viz.: first wrap the feet and legs from above the knee in flannel, then take a towel, only large enough to go down the front of the body from the neck to the flannel's edge, wring it out of hot water, and then proceed as pack for children, scarlet fever. After the sponging over the body, put on a chest compress, made of spongio-piline, or 177, and a body-bandage, calico and oil-silk, squeezed well out of hot water, and wear these regularly night and day. Afternoon, give a mustard and water foot-bath,

86 deg., or comfortably warm, for a quarter of an hour, and well rub the feet dry with a warm dry hand, and put on woollen socks. Bed-time, give a hot bath, as stated in CROUP, or if delicate 68 with 153½ during, and renew the chest and body-bandage with hot water, and put a mustard poultice on the soles of the feet, to be worn all night, if possible, or 153½.

CHILBLAINS.—If not broken, put the parts affected into as hot water as can be borne, and raise the heat when in, for two or three minutes, till the parts are very hot; then put them immediately into another vessel of cold water, just one minute, then rub them dry and warm with the dry hand, and the *soles* of the feet with a few *chillies*. Let this be done whenever itching is felt, and a cure will soon be effected. But if broken, then apply the process as directed in article upon Burns and Scalds.

SORE HEADS IN CHILDREN.—On the least appearance of the eruption, immediately attend to 130, and put on the child a linen cap, squeezed out of tepid water, and a mackintosh or oil-silk cap over that; be careful frequently to re-wet the linen cap, and at the same time wash it, or have a change of caps. If the eruption is bad, apply 130 twice per day, or oftener, and give the child 45 twice per week, as directed in scarlet fever pack; no flesh meat or stimulants, and hair cut quite close. Silk webbing cap also good.

SCURF OR ERUPTION ON HEAD.—For adults.—On rising, well wash head with very hot water, and then tepid, and then put on spongio cap for awhile. Once in a day use steam pads, very hot, for twenty minutes, removing them every five minutes, and then put on 215½ out of vinegar and tepid water for awhile. Repeat this, if possible, during day, and at night put on a silk webbing cap, well larded with lard without salt, and the oil-silk over. If not very bad, the following will cure:—Wash the hands in some warm water, using soap; then gently sponge head with the same water; dry softly, but do not rub the head; then put some pomatum in the hands, and gently rub it in; put on flannel with cap to sleep in; on rising, the same, without the cap; on no account to comb or scratch the head; use a soft brush gently to straighten the hair; only olive-oil and spermaceti. (For Pomatum, see Index.)

The following treatment for SCARLET FEVER, or DIPHTHERITIS, in children, never fails to restore, if applied in any reasonable time after the commencement of the attack:—

When the usual symptoms appear, which are sore throat, nausea, inflamed eyes, and general chilliness, followed by heat and red patches on the face and arms, immediately commence as follows:—Put feet into hot mustard and water, and cold wet bandage round head, whilst you prepare a *wet pack*, which is done by laying a *warm blanket*, or two blankets, on a sofa or bed, and a *well* squeezed-out towel out of hot water over the blanket; then wrap the child's feet up in a separate piece of warm flannel, and lay it naked on the squeezed-out towel, and lifting up the child's arms, wrap one side of the towel round the body; then lay the arms down, and wrap the other side of the towel over; then well wrap one side of the blanket over, and then lay a soft pillow or blanket over the stomach, and wrap the other side of the blanket over, and let the child lie so for half or three-quarters of an hour, taking care that the head bandage is kept cool with cold water. When the child has been in the *wet pack* the time above named, take it out, and quickly sponge or rub it over with another towel and tepid water, and then well dry it with a coarse dry towel, and put on calico body-bandage 163¼ or 166, sprinkled with hot water, tight round the bowels. When dressed, pack the throat with a strip of calico, or a small napkin squeezed out of hot water, and a warm strip of new flannel over it, the flannel large enough to wrap round the throat several times; still keep the wet head bandage on, frequently re-wetted when warm; whenever the feet are cold, put them into hot mustard and water for three or four minutes, and wipe them over with a damp towel before rubbing them dry. Continue the above treatment each day till the skin is red

with the rash, and then only sponge the whole body over morning and night with warm water, keeping on wet body bandage, and attending to throat, head, and feet, as above, and the child will soon be well. If the child is too *delicate* for the *wet pack*, only use the *sponging*, &c. Let the child drink what cold water it wants, and never mind about troubling it with food, as *very little* is needed, and that little should be very *light*; no stimulants or medicine whatever.

When the fever settles principally in the *throat* and *head*, then in addition to the above, apply 82; and if the throat is still bad, put a mustard poultice on till red, then spongio *dry* for half an hour, and then apply 82 again, or 220. Also put the back of the child's head in a basin of cold or tepid water, and sponge the forehead well whilst in, for a quarter of an hour at a time, several times a day. Give "cooling drink" * three or four times a day, whilst fever is high. After the feverish symptoms are gone, frequently, in delicate constitutions, the bowels and legs, and sometimes the whole body swells; but no alarm need be felt, as it is only from weakness; but then adopt the following treatment:—Put *soles* of feet in hot mustard and water, and then dry-rub the legs with warm hands, rubbing *upwards*, several times a day (we also use neat's-foot oil for this rubbing with great success), and morning and night dry-rub the whole body with hands and *dry mustard;* wear a piece of new flannel round the body, instead of the body-bandage, and wrap the legs up with strips of new flannel, and give one tea-spoonful of cod-liver oil every night, in a little cream, if it does not produce sickness.

SAINT VITUS'S DANCE to be treated as Hysteria and general constitutional treatment (letter C, *Special Home Treatment, Index*), *must* be persevered in till all the twitching is *gone*.

CONVULSION IN CHILDREN.—Immediately undress the child, wrap it in a blanket, put cold wet cloth round the head, feet in hot mustard water, rub bowels gently with dry warm hand, or 150, whilst bath No. 35½ is prepared. After No. 35½ bath, put the child into No. 64, renewing the head-bandage as soon as it is warm; on coming out of 64, put on 163¼. If mothers would be careful, when their children are not quite well, and put them into a wet pack (see "Scarlet Fever" pack), they would prevent convulsions coming on—there must be much derangement of health before convulsions can arise.

"THRUSH," OR SORE MOUTH.—This common disease among children arises from the heat of the stomach, and the best treatment is as follows:—On rising have 78½ after the child's usual washing; forenoon and afternoon, 89 for five minutes in sitz (see article on *Children's Sitz, Index*). Bed-time as on rising. *Very frequently* during the day rub the child's gums, tongue, and mouth with the finger and cold water, dipping the finger continually into fresh cold water during the rubbing; and also let the child swallow a tea-spoonful of cold water *frequently*. As this disease generally arises from *over*-feeding, the longer the stomach can be kept without food when the thrush is bad the better. And allow me to give the word of caution again to mothers, not to feed their infants more than every three hours, if they can possibly avoid it; they would by this course save their children from this, and that other too common malady, "*Worms*."

WORMS.—The best method of curing this distressing and often destructive disease, both to the comfort and health of the poor child, I find as follows:—On rising have 69, but only for a quarter of an hour; forenoon 87, but soap-suds that heat, instead of water to sit in, and keep the child in, if possible, for ten minutes. Repeat the 87 also in afternoon; bed-time give 222 or 20. Once a week omit all the above, and give "wet pack," as in scarlet fever, or 99 and 163, or 166, Bath List.

WORMS IN ADULTS cause disease in the bowels and great irritation, and are a cause of complaints being exhibited in other parts of the frame, that appear to the casual observer to have no connection with the bowels. Epileptic fits, sickness and nausea, irritation at the seat, and general disturbance of the nervous system,

* COOLING DRINK.—To one tea-spoonful of citric acid, two of cream of tartar, and the juice of half a lemon, add a quart of cold water, and sweeten with lump sugar. If lemon cannot be procured, add a little more citric acid, and the juice of an orange

excessive craving for food, and griping pains, are frequently the symptoms of worms in the intestines. Our remedies are general tonic treatment, and the use of the body-bandage; drinking half a pint of cold water on an empty stomach four times a day. Worms are, however, difficult to eradicate, and require time and patience; but to attempt a cure by purgatives or injections of turpentine often lays the foundation of fatal disease.

WORMS.—A real cure can only be effected by getting the digestive organs in a healthy state. Worms cannot live in a healthy, vigorous state of the intestines, and hence all attempts at curing worms, by taking strong medicine or bitters to destroy them, only result in mischief, and sometimes in real disease of the mucous membrane of the bowels. If the human intestines were a mere pipe without vitality, strong physic would effectually destroy worms or any other parasites; but it is not so, and therefore in a multitude of cases the cause of death of the person is laid by the means used to kill the worms. Strict diet should be observed; no stimulants, tobacco, mustard, or rich food; use 69—20 min., 50—18 sometimes, 152, with india-rubber bottle, not pump, with warm soap and water four times per day or oftener, with only about a quarter to half a pint of water; use only an india-rubber bottle; an injection of Condy's Fluid (*permanganate of potash*), eleven parts water to one part of the fluid, good often, 119½, 103, 105½, 115, 168½, slightly sprinkled, 174 ditto under it over the stomach in the day, 163½, 220 sprinkled with a little chillies, and 169¼ over all every night; nearly a tumbler-full of cold water after every meal, if it can be borne without pain to stomach; this is very good.

The "sitz bath" can be applied for young children, similar to the general sitz bath, only smaller in proportion, say ten inches wide, eleven inches long, four inches deep inside, legs three inches long. On the benefits of this bath I wish especially to draw the attention of mothers as connected with the treatment and cure of that too prevalent weakness which causes children to "*wet their beds*" at night. I must first observe that if the infant's regular treatment was attended to strictly, this weakness would rarely occur, and thus save mother and children much distress and inconvenience.

Treatment, when the said weakness is only slight, will be found sufficient by strict attention to 106; but place a flannel pad in bath for the child to sit on, and then the cold will be no shock, and can be done without undressing the child. When this treatment does not produce a cure, then, in addition to the 106, as above, give the general treatment, for the whole constitution thus requires assistance before the local weakness will yield to the above treatment. I have also found the "spongio support" (*see Mrs. Smedley's Manual*) useful in difficult or obstinate cases, and the child should be dressed in warm clothing.

If the child's spine should be weak, it should have 186 and 166 on regularly, and the spine should also be rubbed with the hand and cold water, night and morning, when replacing these. If legs or ankles are weak, then 214 should be applied, and after 214 has brought out a little rash, then remove them, and only wear new flannel strips round them, and attend to 149; and the earlier the above remedies are applied, the more effectual they will prove.

TREATMENT FOR CHILDREN WHEN THERE IS A SLIGHT "STOMACH" DERANGEMENT.—If "feverish" from it, immediately give them "wet pack," as directions in scarlet fever, or if not convenient to do that, give 64 with 153½ and 224 during. Keep 163¼ on regularly for a day or two, and if necessary repeat either of above each day till well.

If "sickness" is the effect of stomach derangement, then instead of either of above adopt 48, but mix the mustard with meal, so that the child can bear it better and longer—indeed all meal and sprinkled only with mustard will suffice where skin very sensitive. 137 for three or four minutes before putting into 48 would be very advantageous.

If much pain in head, then 115¾, using the mustard and meal as for 48 would be a better remedy, and in that case 13¼ and 12½ would make 115¾ more speedy in its effects by giving them first. Next day if head not well, give 70 and 153½, and take 130 or 131½ first.

Burns and Scalds had better be treated as 150½ on List, and when in a part that cannot be thus immersed, then foment with pads, squeezed out of hot soapsuds, "dressing" the same as stated in 151. No. 58 also very useful, and 220.

Case of Scald.—Our groom had a child four years old severely scalded by falling backwards into a pan of boiling water, which got down the back under the frock. The child was in agonies; the clothes were quickly taken off; back of head and both arms were in the boiling water. The parents immediately referred to my "Manual;" they first washed over with warm soapsuds, then put him in a wet pack with towels wrung out of hot water, and a blanket and mackintosh cape over all. The accident happened at eight p.m.; in half-an-hour the child was sound asleep in the pack; he slept sound till eleven p.m., when the pack was renewed, and he slept till morning, and again washed over with warm soapsuds; then followed the other directions for burns and scalds, and the day following the child was out of doors at play, and was at school as usual Monday but one after the accident, well.

Hysteria, or Hysterics.—Immediately undress the patient, and commence hard rubbing with the hand, over the region of the heart, well wetting the head with cold water, and, as soon as possible, put the person into a shallow bath of 86 deg. water, and well rub the body whilst in, especially round the region of the heart and down the spine; and, if the patient is not too delicate, a can of cold water poured down the spine would be very beneficial. When the violence of the attack is over, then put the patient between blankets on a bed, and apply mustard poultices to the soles of the feet, as 153, and keep the head well packed, and something warm over the bowels—a fomenting can is best. If a shallow bath is not at hand, then let the person sit down in a sitz bath, or large pan, in 86 deg. water, and put the feet into 105 deg. mustard and water, in another vessel at the same time, applying the rubbing and cold water as before directed. Treatment for Palpitation also very good.

The Mumps, being of an epidemic character of disease, should not be omitted, especially as they principally affect the young, and cause much pain from the locality of the inflammation being on the gland, between the ear and the upper jaw, which affects the swallowing. Treatment for the Mumps: 135 and 58 are the numbers best to be applied locally to ease the pain and reduce the swelling, &c.; but as there is always general fever accompanying this disease, the more regularly the following is attended to the quicker the constitution will be able to throw off this distressing complaint:—On rising—78½, using 135 and 82 during; instead of the caps as 134, put spongio piline, sprinkled with hot water, on the affected part, and flannel over dressing. Throat as stated in 82 will be found very useful, as the glands, being kept very warm, will find great relief. Forenoon—141, but lay the mustard cloths over the bowels also, and repeat the 135 and 82 as on rising. Afternoon—115¼, and use 135 and 82 during 77. If the whole body be very hot, then take 47 occasionally instead of 141 in forenoon, and then omit afternoon treatment. Bed-time—137, and135 and 82.

Mania.—I have had a great number of these cases, so peculiar to females. Our most natural treatment has triumphed over Nature's derangements, and restored to health of mind and body where all hope was previously abandoned by the patients and their relations. The most gratifying work of my life has been to see such restored to reason and the enjoyment of spiritual life. The number of such the last twenty years is more than I can recollect.

"Mania."—As I have alluded to this fearful disease, by showing that it can be brought on by neglect of constitutional requirements for health, or by aggravation of other various diseases, through the application of wrong and hurtful so-called remedies, it will be but right to state the mild hydropathic plans which I have found so successful, under Divine blessing, for this pitiable condition of invalids. Very many such cases have been thus saved from the confinement and misery of lunatic

asylums, and been restored to their relatives and friends, to fill their various positions in society with credit and usefulness, and several as bright and happy Christians, to "adorn the doctrine of God their Saviour."

Before entering into the detail of the treatment, it would be advantageous to my readers to know a few general principles that must be followed out, in connection with it, so as to produce these happy results.

Such cases should be separated entirely from their own relatives, as the patient is apt to dwell morbidly upon topics of conversation upon family matters, which excite the mind; and also the kind sympathy shown by a near relative reacts upon the mind of the sufferer with a very prejudicial influence. These peculiar cases also require to be much studied by those who undertake their management, as regards their various temperaments of mind and dispositions, so that a steady, kind, but firm discipline may be exercised over them, always leaning to the kind and soothing manner, but avoiding everything extreme either way. Long walks, and everything that would fatigue the body, must be strictly guarded against, as, in the above disease, the patient is very apt to take exercise immoderately, and the relatives and friends believe it good for them, not knowing that the thirty-two pairs of nerves, from the brain to the bottom of the spine, are thus kept excited, and so prevent recovery. Cheerful occupation, and varied in its character, should, as much as possible, be adopted, so that the time may not hang heavily on their minds. At the same time, all levity or foolish amusements should be strictly abstained from. Sleep should be encouraged at any time, but it must always be natural, or it will not be beneficial.

The patient should never be permitted to be cold, as this will very seriously check the recovery. The head should always be the coolest part of the body, but even this must not be allowed to cool too rapidly, or have any shock of cold, as the reaction will be too strong, and thereby increase the malady.

Diet is also of great importance, as the least disturbance of the stomach reacts with great force upon the brain; and also because, in this disease, there is often a ravenous appetite, or a very morbid one, both requiring the greatest watchfulness.

Though I have so frequently urged upon my readers' notice the danger of "stimulants," yet, as it is so painfully and fearfully resorted to for mania, by medical advisers, and so-called kind friends, I must reiterate its baneful influences, both to body and mind, and earnestly advise the entire disuse of all alcoholic drinks. Cold water alone, as a beverage, is decidedly best under this affliction, as it will be the safest and quickest agent to purify the blood, and it will suit the nervous system best also. Plain, nourishing food, and adapting it to the state of each constitution, but always remembering that nourishment does not consist in quantity, but in quality: and good digestion will be the best guide in this matter.

One more point for general notice, and then I will proceed to give the necessary treatment, and this is, that no disease requires more time and patience than mania; and, therefore, the relatives and friends should not expect any material or visible change till the following treatment has been strictly adhered to for six, seven, or even twelve months; and, if they will reasonably consider this subject, they would compare the alternative—even a lifetime of misery and expense in a lunatic asylum.

Hydropathic general remedies, which, of course, require to be varied according to the several cases and periodical changes of each patient:—

Compresses and bandages, also varied according to the heat of the body, &c.—215, 194; 188 or 186, 175, 170, 168, or 165. On rising, 14, 15, 19½, 26, 30, or 31. Forenoon, 48, 112, 115½, 115¾, 122½, or 123, 115¾ very useful. Afternoon, 137, 141, 144, 156 157 or 161½. Bedtime, 78½, 92, 93, 94, 98, or 99. Also 220 (slightly sprinkling the bread with chillies) all over bowels and kidneys, and spongio body-bandage all round, or 168½, and also 224 and 153½, and keep in bed, only sponging body with vinegar and water when much perspiring, is very useful treatment. (See also Treatment for Sleeplessness.)

"Head" treatment should always be given before the above, and care should be taken to discover which of the following produce the most soothing and cooling influences :—130, 130½, 131, 131½, 132, or 135.

Many more diseases might be specified, such as rheumatism, fevers of all descriptions, sciatica, tic-doloureux, &c. &c. &c. But as all these are fully entered into by my husband, in his work on "Practical Hydropathy," I wish to confine myself to that class of diseases and those subjects which are to meet especially the wants of my own sex, in a plain, and, as I have said before, unscientific form, for the advantage of their *private* study.

"DEAR MADAM,—I have read both your work and Mr. Smedley's on Hydropathy, which a friend has kindly lent me, and am fully convinced of the efficacy of your treatment ; and can now understand why I have been getting worse instead of better. Oh, that I had known of your Establishment before ! but I hope, please God, it is not too late now. I must tell you I have been suffering for nearly twelve months with neuralgia in the ovary, at least that is the opinion of all the doctors I have been under. Since February last I have suffered more pain than I could have thought it possible for any human being to suffer and live. When it first commenced it was in the ovary only. I went to the most skilful surgeon in Cheltenham, who thought it was in the neck of the womb ; he used caustic, &c. &c., after which it got much worse, the pain spreading round my back, left hip, all down the side of my bowels and thigh, and attended with great sickness, and bearing down of the womb and bladder. He gave me any quantity of opiates to lull the pain, but without effect ; for they always seemed to aggravate it. After being under him six months, he said he could do no more for me, and advised me to consult a London surgeon. My husband then called in a very clever physician, who also confessed his inability to do me good ; and he, too, advised me going to London, which I did, but received no benefit there. Since then I have been worse than ever. The pain comes on in paroxysms, which last six, seven, and eight hours, frequently without a moment's interruption, causing great sickness and faintness. I think every time I shall lose my reason ; it seems more than I can bear. I have lately (without being ordered) tried hot baths, also hot-water cans to the parts affected, and any quantity of mustard poultices, but sometimes it is so obstinate that nothing will relieve me ; and I am now so weak that I cannot walk out ; and my appetite is very bad. Will you kindly tell me if a similar case to mine has ever come under your notice, and if you think your treatment would cure me ; also the probable time it would take to do so ? I am sorry to ask the last question, but I am obliged to do so on account of the expense, as our means are small, and I have been such a dreadful expense to my dear husband, doctors' and chemists' bills being a fearful amount. An early answer, with your candid opinion, will greatly oblige —Believe me, my dear madam, yours truly, ——

"P.S.—I forgot to mention that I have been under an homœopathic doctor the last six weeks, but have not received the least benefit."

(*Mania case cured.*)

"DEAR MADAM,—I received your letter this morning before starting for ——, in reply to Mrs. ——'s of ——, and who at present is visiting in ——. I feel so grateful to Mrs. Smedley for kindly meeting my wishes with respect to my dear daughter. Her affection being mental, I almost felt afraid she would not be received into your Establishment. Our surgeon assures me there is no bodily disease whatever, but she is labouring under a delusion, thinking herself very naughty and very unworthy ; she will require a special nurse, as she has very melancholy thoughts, and is of a very sympathetic nature. This is of recent occurrence, and has been brought on by an overtaxed brain. I am returning to Scarborough in the morning, and hope to be able to arrange to be with you at half-past four on Thursday. I remain, dear madam, ——."

STRYCHNIA, which is now so commonly prescribed by doctors, produces terrible effects, and is never used without permanent injury. We have had many cases come to us for relief after having taken strychnia, but I believe the effects are incurable; the involuntary spasmodic action caused by the drug is distressing to witness; and, as to curing any disease, it must be plain to any ordinary observer such strong poison cannot aid the work of nutrition. The medical men know this, yet go on prescribing it, as will be seen below at the inquest.

"Lavinia Ann Francis, aged 16 years, the daughter of a medical practitioner, died under very sudden and mysterious circumstances, from strychnia. On the night of the 5th inst., the deceased, who had been in good health and spirits, retired to rest with her younger sister. On the following morning, at seven o'clock, the deceased got up as usual with her sister. The latter repaired to the kitchen, and the deceased proceeded to the drawing-room, to perform their usual domestic duties. Shortly before eight o'clock the deceased ran down-stairs into the kitchen, and told her sister that she had cramp pains all over her. Her father and mother were called, and the deceased was placed upon a bed, where the symptoms she was labouring under became so alarming that the parents sent for Mr. Olding, and other medical gentlemen, who adopted remedies for hysteria, but she expired in about two hours afterwards. Mr. Thomas Orton, surgeon, of White Horse Street, Stepney, said that he was called to see the deceased on the morning of Monday, the 6th inst., about a quarter-past nine o'clock. He found her lying upon a bed, partly undressed. She was suffering from violent convulsions, and was quite sensible at intervals, when the paroxysms had subsided. She frequently called out, 'Keep me down,' and her whole body was vibrating with spasm. There was great congestion about the chest, neck, and face, and deceased had had three convulsions. The face was livid, and of a leaden hue. When witness touched her, it seemed to bring on the convulsions. Her jaws were fixed, and her eyes were ready to burst from her head. The pulse was jerking fiercely. The father of the deceased suggested bleeding, which was not admissible. Remedies were administered when the fits ceased, and there were symptoms of lock-jaw. Deceased afterwards had another fit, and then swooned away and became tranquil, and died in about a quarter of an hour. The medical attendant said, 'I have no doubt the deceased died from the effects of strychnia.' The quantity found in the stomach was very small, but that was not a matter of moment, as it was over and above what had been absorbed into the system, so as to cause death. Strychnia is a medicine, and is used in every surgery. The twelfth of a grain would be a large dose for a girl of that age. A quarter of a grain would have killed her, if administered in a single dose. The effects of the poison came on in a quarter of an hour. Mr. Robinson, the assistant-surgeon to the Stepney Union, was next called, and said that strychnia was not sold as a poison, but was kept for medical purposes in old chronic cases. Witness asked Mr. Davis, who assisted in the dispensary at the workhouse, whether strychnia was kept in the surgery, and he said, 'Yes;' when he showed witness a small bottle, which had been kept in the cupboard of the room where the medicines were made up."

(*Ruined case by strychnine.*)

"I write on behalf of a man pitifully afflicted, to ask your candid opinion of his case, after I have described it as nearly as I can, and also if any such case has come under your treatment, and if so, how terminated. Perhaps you may think I am asking too much at once; but, sir, you will understand when I tell you that he has had four or five professional gentlemen already to no purpose. But being led to believe that you have had considerable experience, and also been the means of restoring many poor sufferers, I beg you to be kind enough to answer this as soon as convenient. And now for my poor description of his

ailment. About June last was troubled with pains under left breast and shoulder. Was treated for indigestion by an M.D. Continued to feel it more acutely in the muscles of the arms and upper part of the body until about the middle of November, when he thought to derive benefit at Buxton Baths, and went accordingly to make trial, but to what purpose you may know when I say that, after being there about a fortnight, while walking through the hall one day the left leg twitched up, and consequently he fell to the ground. From that time the twitchings in the leg got worse, and he felt a pain in the bottom of his back, and a sense of tightness, as if bound round bottom of back and belly with a cord. He remains much the same now as already noticed, but of course weaker and worse, and during the last month (April) he has had dreadful pain on the shoulders, under arm-pits, right from bottom of back to top of head and across back of neck. Always costive; never moved but by purgatives. Does not know even when he makes water, which he does often in the night. I don't know that I can explain myself much clearer as regards the twitching of the legs if I say that he has excruciating pain at bottom of back, which draws the legs up in a sitting posture, with a tendency to cross each other. He can get but very little sleep either night or day. He is something over thirty years of age, always been very temperate, and has never met with any accident that might cause it."

(*Our treatment was well known to the following Case, yet they would trust to the doctor's murderous practice, till neither our treatment nor any other could save the woman's life.*)

"Dear Sir,—I write to you now respecting the wife of ——. She is forty years of age, has been confined to bed for nine weeks, and suffers from pain in the hip joint, which also extends to her legs generally, and her medical advisers express their belief that an abscess is forming. She has been blistered and rubbed, and taken a great quantity of medicine, but no improvement is manifested, and she is really in a most exhausted condition at present. Pills are now being taken by her, probably to induce sleep. Her husband is very wishful to try your treatment, and I shall be glad if you will telegraph me to-morrow whether a nurse could come over here from your Establishment, and take charge of her case."

(*Inflammation of Lungs Cured.*)

"Glad to see your letter in the *Guardian*. You will remember some four years ago my mother (72 years of age) was attacked with inflammation of the lungs. I was sent for, and found two medical men in attendance. I sent them away, not liking their advice to blister, &c. By keeping her continually in hot foment pack, 64, 141, and following the general treatment, we cured her. Aged 76, some months ago she had another similar attack. I was away at the time; and the disease had got well ahead. I at once followed the old practice—kept her continually, day and night, in hot pads renewed every hour. The doctors said this would kill her; so I dismissed them, and called in a very sensible man, Dr. ——, who approved of the treatment I was adopting. The case was complicated; my mother only having one lung, which was inflamed; the other lung being diseased, of old standing. There was typhoid fever as well, and the case a very bad one. We cured her in a week."

CARBUNCLES are very often fatal under ordinary surgical treatment. We have seen some distressing cases too far gone to save life; other cases given up by the doctor, before coming to our Establishment, and some at their own homes, have been cured. Glands are very liable to congestion and consequent swelling. (See cut of Lymphatic Glands in this work.) If in such cases fomentation was

applied, bread poultice and damped spongio piline, to get more vital heat into the gland, there would quickly be an end of the congestion; but instead of giving more life to the part, cases we have had have had iodine, &c., applied to further deaden the gland, the certain consequence was further swelling and inflammation, and then gathering, when the doctor makes "a free incision," to let out the matter, the consequence is sloughing, then caustic, then spreading of the wound until malignant cancer sets in and destroys.

CARBUNCLES should never be cut deep. When matter is come to a head, and will not break, manipulate the part to get the matter to a point, and then slightly puncture, but never beyond the skin. For treatment, use 146½ Bath List, same as for sore legs. When deep incisions are made, it is generally fatal.

CUT OF HAND.—Gentleman, age 42, two rather severe cuts; health not good at the time. When the accident occurred, the fingers were bound up and put salve on, then showed it to the surgeon, who thought the bone was injured, ordered poppy fomentation, but spoke lightly of it. The arm, however, began to swell, and the arm painful, preventing sleep. In this state came to us, and as we saw it was a case in which lock-jaw might come on at any hour, we did not like to leave the case, but undertook it; and it was soon seen how Nature responds to the principle of doing nothing but what aids her work of nutrition. First the hand and arm was put in hot soapsuds, No. 150½ in List; then Nos. 47, 165, 172, 214 to arm, and packed the hand in linseed poultice, with dry spongio over or wash-leather; next morning 150½ to hand, night and morning, 47 in forenoon, 93 afternoon; continued this four or five days; then 46, 141 in forenoon, and continued the other treatment; nothing but revalenta diet for five days, then a mutton-chop once a day. As the skin of the injured part rose, gradually cut it away, to allow the irritating matter to come away; this continued, and as the hand healed, used damp wash-leather until well, and giving home treatment.

LEGS SORE, IRRITABLE, OR INFLAMED.—Immerse them in meal and water just a comfortable heat, and keep up that heat for three hours, two or three times a day, or even, if very bad, all day will be best, and at night or when not in the above immersion, put on whole leg a poultice made with linseed meal, and on the top of this have a legging made of spongio piline, mackintosh, oilskin, or water dressing, whichever most convenient. Continue whole of above treatment till nearly well, then adopt 173¾ to complete cure.

Case No. 4.—LOSS OF THE USE OF ONE ARM.—I have lately had in my Free Hospital a case of the loss of the use of one arm, from smoking tobacco. The man has returned home entirely restored, and, but for this treatment he would have been a cripple for life. Neither the parish doctor nor the infirmary officers, who had the case, could give him any relief; nor were they likely to do so, because their treatment of such cases goes at once to lower the vitality of the very nerves that are already weakened from want of nutrition. Short steamers, Nos. 51 and 27 or 1, with 46, once a week; Nos. 59, 27, once a week, and No. 2 on rising, and after a short time colder treatment and bandaging the arm, was all we applied; 263½, 172, 107, and 214 to arm.

Case N. Injured knee by a blow on board ship; aged 20. On rising, No. 18, or 21, 73½, or 16, 73½, taking care injured limb is kept from cold water; forenoon, 143, and afternoon also; 59 twice per week; other days, 18, or 112, feet in hot mustard, or 120, or 121, or 16; 163½ in day, 172 over night dress, 153; 214, with plenty of flannel wrapped over knee night and day. Crisis came on, the knee suppurated as it had done before, and, shortly, several pieces of decayed bone came out. Continued treatment until matter ceased running; then dressed leg with crisis calico and flannel; 21·73½ on rising, 59 once a week; forenoon and afternoon, 147, two hours each time, with 153; bedtime, 147 with some hot

water by bedside to use in night when awake; soon as heat is subdued in knee and leg, put on silk stocking, and keep it damp with warm water, and put dry merino or other stocking over silk. This case was thoroughly cured.

CASE OF INJURY TO THE KNEE.—A basket-maker, aged 20, employed in his occupation, using the sharp-pointed knife in making baskets, ran it into his knee, and let out a quantity of the synovial fluid from the joint. A physician, practising as a surgeon, was called in; fomentation, ointment, and bandages were applied; the young man lay in bed five weeks, and the doctor told him he would be a cripple for life, and would not again have the use of the knee joint. Having employed the father of the young man, and hearing of the case, I sent a carriage for him to my Free Hospital. The knee was immediately steamed, and hot soap and water applied, then all the limb cased, including the foot, in spongio piline, damped with warm water, and dry flannel wrapper over. The object of this moist warmth was to raise the vitality of the limb; and we knew if this could be accomplished Nature would soon set up a curative process, and we were not disappointed, for by repetition of treatment to the limb and to the whole frame, as follows, the chronic inflammation was soon subdued, and the injured tissue and diseased matter thrown off by crisis from the knee and whole of the leg. The young man has now the perfect use of it, and has for some time worked at his occupation as formerly. Used Baths No. 35½ or 55, or 18, covering the injured limb from the cold water, 42, 13, and 11, 115, 91, 141, 144, 216, 148, 156, 194, 170, 199, 200, 206, 207, 208, or 210. These baths varied each day, being careful not to overpower the strength of the body by too much treatment. Now, seven years since, he continues perfectly sound.

DISLOCATION OF THE KNEE-CAP, OR PATELLA.—A gentleman, age about 28, strong and healthy constitution, was nursing his child, and by some means gave his knee a wrench, and displaced the cap-bone. He applied to a surgeon, who replaced and bound up the part, applying stimulating lotions and other usual remedies; but the knee swelled to a large size, and all the means that the surgeon could bring to bear upon it were unavailing to reduce the effusion in the joint which had taken place. There was crepitus of the joint, and little hope was given of relief but by making a stiff joint, or, possibly, amputation. We entirely removed the effusion and the crepitus, and cured the knee simply by our fomentation and bandages; Bath List, No. 141, to the leg; also Nos. 143, 214, and 137, with treatment for the general health; dripping sheets, Nos. 38, 51, 59, 101, 163½, 172, 208; spongio knee-cap also 17.

KNEE CASES.

"DEAR SIR,—I have read your book on Hydropathy, sent us by a friend. I have been induced to write to you for your opinion of my husband's case, whether you think your treatment would be suitable. Six years ago, when he was nineteen years of age, he strained his right knee; it became very painful and swollen; he had advice, and iodine applied, but it got no better but he was able to get about—sometimes more painful than others. Two years, and a half back he was advised by an eminent surgeon in London to rest it for three months, but business of a pressing nature prevented his doing so, and a surgeon in our neighbourhood, to enable him to get about, made a stiff knee-cap (he said) to save the joint. It has now become *perfectly* stiff. A year this spring he began to feel pain in his left hip; the doctors said from using it to save the right. Other surgeons said it was sciatica. He went about until June last year in great misery, when we went up to London to consult Dr. Paget, who said it was a similar disease to that in the right knee; that we were to return home; that he must *lie* on his *back* and *keep* the joint perfectly *quiet* until he was better; that his health must be *carefully* watched. He was put under the care of a surgeon in the neighbourhood, who has been attending him ever since. He has gained flesh and improved in health since he has been laid, and goes out

every fine day on his couch, from *which* he never moves. He has had no medicine but a little quinine occasionally, and cod-liver oil from the first. The bowels are confined, but relieved every other day without aperient; the tongue is always furred.

"There is now no acute pain in the hip; but about two months back, after trying mineral water for two months, one doctor thought there was fluid in the joint; there was great enlargement. Lately it has come to the surface, and is now being painted every day with iodine, and it is thought will discharge. (I forgot to say the swelling had left the joint, and gone lower down the leg.) He has now been laid on his back eight months, without much prospect, I fear, of recovering the proper use of his left leg again. One doctor intimates a stiff hip, and we very much fear it may be so. At all events, we are losing faith in the old system, and shall be glad of your opinion of the case, and whether you think benefit would be derived from your treatment, with terms at your Establishment."

"Dear Sir,—On the 26th April I was trying a new ventilator in the ceiling, with a piece of lighted paper, and in stepping from a chest of drawers, five feet high, to one lower, the flame caught my hand, at the moment of stepping down, causing me to miss my footing, when I struck the inside of my knee with the whole force of my weight, on the edge of the drawers, and came down on the leg, doubling it up under me. I lay sick and faint for some time, I then rose, wrapped the knee in a damped spongio body compress, with a flannel wrapper over. On rising next morning I found the knee very painful, and difficult to move. I applied a large mustard poultice, with thin calico next skin, and paper outside all over and round the knee, seven or eight inches broad, with the flannel over all. I bore this on as long as I could. I then put on a bread poultice in a bag, eighteen inches long, eight inches broad, and wrapped a swan's-down and mackintosh body-bandage over the knee and leg; during the day steamed the leg, and replaced the poultice. In the evening I had a hot mustard leg bath to above knee, as long as I could bear, and gentle rubbing with cod-liver oil and glycerine, then replaced poultice, put plenty of flannel on during the night. I continued this treatment as much as I could, with the attention I had to give to my patients, and went to the Establishment as usual. For one month little impression was made on the pain in the knee, and of course I could not walk about. I however felt certain that if anything could cure the injury our plan of trying to raise the vital power was the only course. As to the usual plan of blisters, leeches, iodine, or morphia, I knew they would stop Nature's action, and take life out, instead of put it in; and that with so severe an injury I should lose my leg, or be crippled for life, as I have known so many instances from similar injuries treated surgically. After a month red spots began to appear on the knee, and the knee gradually began to look inflamed, and to swell. I knew then that Nature was setting up a curative process, and that I should get well. Instead of subduing the inflammation and swelling, I encouraged it all I could by having the leg fomented, as in 143 Bath List, with hot pads, sometimes using our clever little portable galvanic battery, placing the foot in a warm water foot bath, then putting the negative chain under the foot, and applying positive to the knee. This was of great service; but all the time having to attend to my usual duties, I could not apply the treatment so constantly as I should otherwise have done. When I could get a whole day I fomented as 143, from rising to bed-time, on a sofa, spreading a mackintosh sheet on sofa, then two blankets, and packing the leg and knee with three flannel pads, about twenty-one inches square, and each six thicknesses of flannel wrung out of as hot water as I could bear, and hot water bottle to foot. I had my meals and got through my correspondence also on the sofa. At bed-time, first replaced poultice, mackintosh bandage, and a blanket wrapped round over all the leg in bed. The swelling and redness increased to a very painful extent, but soon a discharge of serous glairy matter came out. This went on for ten days; internal

pain was removed, and I knew all was right. I used a wet body-bandage, 165, a good deal of the time, to keep liver, stomach, and bowels in order, and I was, in consequence, in excellent health all the time. When the discharge nearly ceased, I began our evaporative treatment, putting a mackintosh sheet on sofa to keep sofa dry, then two blankets, two bump or thick cotton sheets, doubled in four, wrung out of hot water, wrapped round the leg, covered with two blankets, but not with mackintosh sheet, having two sheets, and another squeezed out of the hot water, to renew every ten minutes. This went on for an hour or two at a time, after I got a silk stocking, cut it off at ankle, drew it on to the leg and over knee, then with a sponge wetted it well, got a lamb's-wool stocking, cut off at ankle in same manner, wrung out of warm water, drew it over the silk, and then a regular lamb's-wool stocking over all; tying a dry thin pocket handkerchief, not tight, over knee, to keep the stocking up. I galvanised the knee sometimes, but left off all fomentations as soon as the glairy discharge had ceased. The silk stocking should seldom be removed, but sponged over sometimes with warm water, and sometimes with soap and water; the purpose of the silk stocking is to keep the air from the newly-forming skin, which, if exposed, would be long in forming, and very irritable.

"All the time I was having my usual cold sponging over, taking care not to sponge the ailing knee except with warm water. The silk stocking, or wash-leather, squeezed out of cold water, with flannel over, should be worn till the knee is well; it will strengthen the newly-formed skin, till it is well hardened. My knee is now quite well, only rather weak, and I must have patience in exercising it for months to come. Any extra exertion will bring on swelling, until the part has become strong; but all morbid injured tissues and extravasated blood have been drawn out by the crisis, and I feel the knee entirely free from pain, sound and comfortable. Nothing but crisis could have done this. Blisters, leeches, lotions, &c., could not help Nature to cast the injured tissue, &c., out, but would have taken away her power to do so. Patience is absolutely necessary with such severe injuries."

Cramp in Legs.—Attend to 150 whilst preparing 138, or, if nothing at hand for 138 use 137, and keep hot pads on knees and thighs at same time. For some days after an attack, apply 141, 143, 144, whichever most comfortable, and wrap the legs in dry flannel strips. The general state of health ought to be attended to, as cramp arises mostly from disordered stomach (see Home Treatment). 35½ useful and safe.

I give, as follows, a specimen of letters we receive almost daily, and often several by the same post, and it is no little addition to the anxieties we have to go through to receive accounts of our fellow-creatures ruined in health and brought to suffering and disease, when, had the so-called noble legalised science of healing had any truth for its foundation, a week or two, or often less, of treatment in accordance with Nature's laws and common sense would have restored. In the following case the tissues of the joint would of course be lacerated by the strain, and circulation would be cut off in the small, fine veins and arteries. There would be impeded circulation, and consequently an excess of red arterial blood, causing redness, mistaken by the doctors for virus, or some unnatural heat, when, in fact, no unnatural heat is possible, except what is caused by the excess of naturally hot arterial blood arrested in the part; the serous membranes and the lymphatics would also be injured. We have never had any trouble in curing such cases in a short time; and instead of doing further injury to the part by depressing lotions, iodine, opiates, or blisters, we foment with pads and hot water, put on bread poultices, and by these means restore the circulation, instead of destroying it. Nature quickly answers to this kind and natural help. Employing as we do a very large body of workmen, injuries to the limbs are of frequent occurrence, and in no case do we fail to soon get the injured part sound. I insert farther on an account

of a serious accident to my knee, and the mode of cure. I expected the knee was dislocated, so severe was the strain upon it. Yet at my age I am now quite sound of it. About a year after I had repetition of injury to the other knee and leg. Riding down our steep rough roads, my horse fell, and rolled twice over my knee, leg and side, kicking a hole near the ankle. I lay unconscious for some time, and, being alone, I had much difficulty in getting to the mill where I was going. I immediately had a hot soaping shallow bath, mustard-plaister and poultice, and spongio-piline. I was quite well in under three weeks, and no trace of the injury left to the injured parts. Mark the different result in the following case, under the doctor's so-called scientific treatment of a simple sprain, but which is, nevertheless, senseless and cruel. The young man is in a hopeless state, dying by inches, all his prospects in life ruined, and nothing but suffering before him. I could fill volumes of various kinds of cases, where disease, suffering, and death have been the certain and natural consequence of lowering and impairing Nature's powers under pretence of curing. Talk of technical education being the want of the day ! Inculcate the knowledge of Nature's simple laws, to enable mankind to keep the frame in order, and avoid these butchering processes ; and you will give education of a far greater value than instruction in technicalities. Of what use is technical learning to success in life, when any day the doctor may be called in to use his technically-named remedies of lotions, caustics, blisters, setons, &c., his arsenic, prussic acid, strychnine, and scores of other poisons, to ruin the body, and destroy all enjoyment of life, and even life itself ?

On Friday, March 2nd, 1866, as I was going through my new buildings at Riber, one of my masons came to me, and said that his father (J. Gladwin), who resided at Stanton, burnt his right arm on Shrove Tuesday, the 13th February: that two doctors had been attending him: that the arm was very much swollen, and his sufferings severe. I at once sent the man down to my establishment at Matlock Bank, to the head-bathman, and they both proceeded to the man's house. They found that one of his doctors had just visited him previous to their arrival; and ordered him to take off the poultice he had on, and bind the arm from the elbow to the wrist, to prevent the matter going down into the man's hand; then applied caustic round the arm above the elbow, to prevent matter ascending up into his body, laid his arm on a board, and left him in great agony. The first thing the bathman did was to unloose and take off the doctor's bandage to relieve the arm, and then place his arm in a warm meal and water bath for about one hour; after this he put on a bread poultice along that part of the arm that was swollen and full of matter, and a piece of spongio piline over the poultice, then a piece of flannel over all, wrapping the arm well up from the wrist to the shoulder: the arm was swollen from the wrist to the shoulder, an abscess formed at the elbow, and a sore containing matter extended from the elbow nearly to the wrist. This was about 7 p.m. In course of the night the poultice was taken off: the arm was put in another warm meal bath, which caused the abscess to burst and discharge about a pint of matter. This gave him great relief, the swelling subsided, the man fell asleep. Since that time the above treatment has been constantly renewed ; the arm is very much better, and general health considerably improved. This was on the 8th instant. The second doctor called in on the same day to see how his patient was getting on, and finding him so much improved, began to inquire as to what kind of treatment his colleague had prescribed to bring about such a satisfactory state of things; when he was at once informed that I had kindly sent one of my bathmen, who had taken off the bandage the doctor had put on, bathed and poulticed the man's arm, which had given him speedy relief. The doctor, on hearing this, walked out of the house. In three weeks the man was cured.

Josiah Scotthorn, of Matlock, came into Free Hospital, Lea Mills, March 14th, 1866, with paralysed hand and arm.

He went to bed on Thursday night, March 8th, as well as usual, but when he

awoke next morning he had entirely lost the use of his right arm and hand; being several miles away from home at work, he had no advice until the Sunday morning, when he placed himself under a medical man, who gave him a little medicine, and ordered a blister on the back of his neck. The blister, however, he refused to have on, but took the medicine, as he thought no harm would result from it, the doctor saying he would never recover the use of his limb. After being under the doctor two or three days, and finding his arm no better, he came into the Free Hospital. With three days' treatment his arm was so far recovered that on the fourth morning he was able to shave himself.

In seven days his hand and arm were perfectly restored, so that he could use it as well as ever.

TREATMENT.

First day.—Forenoon—pouring can of hot water on affected part, then rubbed with dry mustard, and bandaged up. Afternoon—46 and 141 bath to arm. Night—hot pouring, dry rub, galvanism: then poultice to wrist, spongio glove over, bound up for the night.

Second day.—Same as first day.

Third day.—On rising—No. 2 and 10: hot pouring: dry rub: galvanism: poultice. Forenoon—137 with 115¾: spongio over with water, 80 degrees.

Fourth day.—On rising—No. 2 and 10: hot and cold pouring to arm: dry rub; and galvanism. Forenoon—spirit lamp; with 75 shallow after. Afternoon—137 with 115¾.—Night—as the first night.

Fifth day.—As the 4th; and rubbed with cod-liver oil.

Sixth day.—On rising—as fifth day. Forenoon, 46; and pad to arm. Afternoon—as third day. Night—as first night.

Seventh day.—On rising—2 and 10, same as fifth day. Forenoon—steam box; and cold shallow: cold spouting on hand. Afternoon—137 and 115¾, Night as before.—Cure effected.

RHEUMATISM.—This is a universal complaint, I cannot call it disease, but a disorder of the nutritive or organic system. By some it is considered to rest merely in the blood. Others, and I think with more correctness, believe the cause of pain, inflammation, and swelling is owing to the sheaths of the muscles and the sheaths of the nerves wanting the required serum, derived from the blood, which is necessary to lubricate the sheaths of the muscles and nerves, allowing them to move easily and freely in these sheaths. Thus any mode of living, or habits of life, or any means by which the blood is impoverished, prevents the supply of this necessary serum to the sheaths (as this serum can only be formed from the blood), and the muscles and nerves consequently move in comparatively or altogether dry sheaths; which soon produces pain and inflammation: and eventually, if not relieved, destroys the vitality of the sheaths altogether, and sets the limbs fast. In all my practice in rheumatism, I have acted on the principle of improving the blood, and have good reason to believe it a rational one, from the cures I have seen by treating it as only a disorder arising from impoverished blood and lowered vitality. I apply steam, calico and spongio bandages, and hot and cold baths, both large and small douches to the parts affected, but not with any expectation of curing, unless, at the same time I can get the tongue clean, and the stomach and bowels in good order, by the means I elsewhere prescribe. Rheumatism will never be cured while the tongue is red or furred, showing chronic inflammatory action in the mucous membrane lining of the stomach, liver, and bowels.

In rheumatism, the first essential point to attend to is the state of the stomach; and to begin a strict system of dieting, discarding tobacco in any form, for this is the primary cause of the crippled state of thousands by the double power for mischief it contains in poisoning the blood and lowering the vitality

of the nervous system by its narcotic power; then all ale, porter, wine, or spirits, which only increase the inflammatory action already so troublesome; next taking but little or no flesh-meat until the tongue is in a nearly natural state: all condiments are bad in these cases, as pepper, mustard, or acids. The simple diet recommended in this book, with the hot soaping 13, 13½, 12, 12½, the 9, 14, 12, 47, 48, to get liver into order, 56, 141, for stomach, 98, 39, 12, 12½, 24, 25, 59 sometimes, no cold applications, and when recovered avoid cold applications except in summer, as the complaint is very liable to return; good warm clothing very essential, and light under clothing, even in summer. Sea bathing highly dangerous in rheumatism. Body-bandages, 163, 233 to 236, worn constantly, chillie paste very serviceable; avoid all medicine stimulants, or tobacco, and a moderate quantity of animal food. These precautions and treatment would save thousands from a painful existence; but we think with pleasure on the vast numbers we have rescued from such a condition, and the beneficial work is still going on and spreading.

For rheumatic fever, 47, 48, packs and common wet pack, steam bath, and 14, 12, 12½, and once a day a hot and tepid dripping-sheet, a spirit lamp and tepid sheet twice a week, a hot washing and soaping sitz, or hot sitz, with flannel pad before and behind, feet in hot mustard, fifteen minutes, 98; wet body-bandage, with flannel wrapper over, night and day, the calico end of the bandage wrung out of tepid water every two hours and well washed; hot mustard, foot and hand bath ten minutes. These are the applications we use; they must be regulated by the strength of the patient and the severity of the attack; free perspiration must be produced; and if it is difficult, let the patient be put in hot shallow ten minutes, and then have spirit lamp. The apparent lowness of the patients produced by these sweating processes must not alarm. I have never known a case die, or be injured, or not entirely recover. If stimulants or flesh-meat are given to keep up strength, the fever will inevitably return. Sleep in cotton socks wrung out of tepid water, and lamb's-wool over. Bandage any parts affected with wet strips of calico, well wrung out, with mackintosh and flannel over to keep in the heat. Spongio piline will keep warm when calico will not. The more the limbs are exercised while there is any rheumatism, the worse they will become, the muscles and nerves wanting vitality, and working in comparatively or altogether dry sheaths gives great pain.

From the theory I take for the most correct one, as to the cause of rheumatism, it will be very evident that blistering, which weakens the system, and heating lotions, which increase inflammation, but neither of which applications improve the quality of the blood, must be injurious; and they will be found in every case to be so. I have had scores of cases which have been seriously injured by these applications, and by them some have been made cripples for life.

Rheumatic Fever.—This spring (1858) I was in Derby, and was requested to see a man in bed with rheumatic fever, aged 28. I found the man entirely prostrated, unable to rise out of bed, joints swollen, and in great pain. The attack had been brought on by cold, indigestion, and overwork.

His doctor had given him strong aperients, in hopes of expelling the disorder, but this caused diarrhœa and increased inflammatory action of the mucous membrane in the stomach and bowels, and so lowering the vitality of the whole frame that the strong medicine given to cause perspiration was entirely ineffectual. In this helpless, miserable state, I had the man wrapped in blankets, and removed by train to my Free Hospital, Lea Mills, suffering acutely during the journey. Soon as he arrived he was put to bed, and had a little tea and bread and butter, and in half an hour a fomenting pack for one hour, followed by a hot soap over and tepid sponging. This comforting, stimulating, yet soothing process gave immediate relief from pain, and produced free perspiration, which

the doctor's utmost efforts for the previous fortnight had failed to accomplish; a half-chest spongio compress and a wet calico body-bandage, with flannel wrapper over, were applied; then the legs and arms bandaged with wet calico strips and flannel, &c., as No. 214 on list, and mustard plaisters to feet, as No. 153; the man slept, and in the morning was greatly relieved. He had then hot soap over, and tepid sponge over, and re-wetted and replaced the bandages; forenoon, another fomenting pack, No. 47, for three-quarters of an hour, and tepid sponge over; afternoon, sponge over and replace bandages; eight o'clock, hot mustard leg bath and wipe over with sponge squeezed out of tepid, and replace bandages. Next day same, only omitting foment pack, as perspiration was freely at work night and day for several days. Treatment after, light and gradually colder, until he could stand and have hot and cold dripping sheets and sitz baths and spinal rubbing, 65 degrees, then cold, and cold shallows and douche. In three weeks the man was thoroughly well, and fourteen pounds heavier than when he came, and has since experienced no return of his pains; the swollen joints soon got to their natural state. This patient had no stimulants, and no medicine of any kind, and no flesh-meat the first week.

The gross ignorance of the nature and constitution of the human frame shown in first "opening" the man's bowels is marvellous: medical men are, however, brought up with certain fixed rules for expelling disease, which rules were made into law long before the discoveries of the nature and function of the nutritive nervous system, and no facts showing the desperate mischief, and even ruin, to the constitution by following those rules will stop such practice. "*Clearing the bowels*," just as they would clear a sewer, without the slightest regard to the difference betwixt living tubes lined with mucous membrane, nerves, delicate absorbents, and minute blood-vessels, and clay pipes; this method is still the law. "*Making the bowels act*," whether Nature required evacuation or not,—something must be forced out; and so it is often, and indeed, always, with purgatives, that the delicate mucous lining of the bowels is more or less forced out with the contents. The mischief purgative medicine causes will be very soon apparent, when it is seen that the mucous membrane lining of the bowels protects the thousands of absorbents which take up the nutriment out of the digested food passing through them. "*Clearing the bowels*" stops these absorbents in their legitimate office, and forces them to absorb the purgative medicine, instead of the proper aliment for the blood; the doctor's physic is carried into the whole circulation, and, besides scouring the bowels, produces inflammatory action of the mucous membrane, and mischief the doctor cannot follow, in other parts of the body. The difference betwixt comforting the body by our harmless applications drawing away the poison pent up by the dry skin, and that of lowering and punishing the delicate internal structure, was strikingly shown in this case. Yet the same doctor goes on with the same practice, and I have at this moment two Free Hospital patients from under the same doctor's hands getting well, and for which cases he could do nothing. I could give a good number of cases of rheumatic fever cured by our applications; in no case have we failed to cure, and in a short time; and, above all, the disorder is thoroughly expelled from the frame, and so saving the patient from heart affection, which is very commonly the consequence of rheumatic fever; and if the patient under allopathic treatment escapes this, he is always left with aches and pains more or less, and weakness in some part, which is never cured by medicine.

It is very gratifying that the following case came and got thoroughly restored, and is now in a prosperous business, with a wife and family:—

"I have a brother, twenty-six years of age. About five years ago, he complained of rheumatism in his left shoulder. It did not so very much interfere with his business, and we did not take much notice of it, thinking it would go away again. Sometimes it would be very bad, and then better again. He sometimes went home in the country for a few days, and my mother put bran

poultices to it, and made wash-leather under-shirts, &c.; but his shoulder did not get any better, I may say kept getting gradually worse; but it was not so bad but that he could go on with his business. About two years ago he worked very hard, and his shoulder got worse, and his arm began to get very thin. The muscle seemed gone, and he could not move the shoulder-joint. He went to a doctor, and he gave him some medicine, and applied something to the shoulder, but did no good. It was now very bad, and he went to Middlesex Hospital. They said it was chronic rheumatism in the shoulder-joint, and said he must get a galvanic battery and use it, and fasten a pulley to the ceiling, and pull the arm up. This he did, but the pain was very bad; he could not sleep or rest, it was so painful. He continued this treatment some time, but it was evidently worse. He went to Dr. A. Paget, and he said it was madness to move it; it wanted all the rest it could get. He went to another noted man. He said, "Move it about. Get some one to move it, or it will be a stiff joint." He went to another, and he said, "Rest it;" and with the advice of Paget and another, he had a splint made to cover the shoulder, and a sling for his arm, and he stopped at my house for a few weeks, and rested his arm all he could, only going for short walks, the pain went away, and only came on when he walked. He is now at Hastings; been here a month. His health is better, but his shoulder seems about the same; it is easy while it is very still, but aches if he walks a little way, or exerts himself in any way. He has lived a most temperate life. I am afraid to take him to doctors. One says one thing, and one another. Do you think you could do anything for him? He has a pretty good appetite; does not appear much the matter, except the shoulder. A reply will oblige."

Rheumatic Fever and Disease of the Heart.—The ordinary allopathic treatment of rheumatic fever rarely fails to leave disease or permanent functionary weakness of the heart. Under our mild treatment this is never the case. I have had a great number of cases who, after repeated attacks, were hopeless of ever regaining their health, and in all cases where actual organic disease of the heart had not been caused by physic, have got thoroughly sound.

RHEUMATIC FEVER.—A case of rheumatic fever was cured by the following treatment:—On rising, 52 Bath List, or 9; forenoon, 46, 14; and, about four o'clock, 39, 14 and 168¾; 220 or 174 and 172 during night; and 168¾, 174 day, the 220 sprinkled with chillies or mustard, or 236, dry. 137 Bath List good. The fever generally returns about night; and if this be the case, give another wet pack, 39, of half an hour, from seven to eight o'clock. Wet a napkin in cold water, and wear it round the head night and day, frequently renewed; omit flesh-meat. No stimulant of any kind or medicine to be taken. We have never found this treatment fail in soon effecting a cure, repeated daily until the fever is subdued, and then fewer baths are needed.

We have had cases removed to my Free Hospital in a cart, in the middle of winter, on straw, with a blanket or two to cover them, and in three weeks have sent them home entirely restored to health. We consider such cases the most simple and speedily cured of any we have; allopathic doctors find them the most difficult of any of their cases, and never thoroughly cure them. We have recently had several severe cases of sciatica, and been very successful with them. If the patient is young, one or two months, and sometimes a shorter period, is sufficient for cure; but if in middle life or older, the complaint is not so soon removed, yet even in these cases we succeed. Nature must, however, have time to act, as there is never sciatica without derangement of the digestive organs, and often of long standing.

The following is the prescription we gave in one of these cases; the general health must be the main point to attend to, and the complaint secondary, and only to comfort and soothe, and gently stimulate the limb:—On rising, first morning, Nos. 13 and 14; second morning, No. 9; third, No. 30. First forenoon, No. 55; second, No. 64; third, No. 46; fourth, No. 61. Afternoon,

first day, No. 141; second, No. 143; third, No. 142; fourth, No. 143, 195, 165, 208, moderating the baths according to the age and strength of the patient. When crisis or rash comes out on the affected limb, then keep cold water off the part, Nos. 148, 146, 33. The more severe the crisis is, the more the body will be purified, and the irritating matter taken out. Sciatica is a formidable complaint, and incurable by medicine; thousands are cripples for life by it, and six or even twelve months are well spent in the cure, rather than go halting and suffering the remainder of existence; very often the inflammation of the sciatic nerve so affects the muscles and ligaments of the hip-joint that dislocation takes place, and then restoration is impossible by any means. The intimate connection of the sciatic nerve with the spinal marrow is the reason of the inflammation of this nerve being of so much more consequence than other nerves more distant from the nervous centres.

I have had some sad cases of the destructive effects of routine professional treatment of rheumatism, bringing on fatal disease of the kidneys. Potass is given to counteract the acidity in the blood, supposed to be the principal cause of rheumatism, which has brought on destruction of the kidneys. I had one fine young man, the hope and pride of his parents, age twenty-five, perfectly healthy till he got cold and brought on rheumatic fever, for which he was in bed many weeks, and then with the rheumatic pains throughout his frame, one of the most eminent M.D.s administered potass till the kidneys were destroyed. A rheumatic fever case with our treatment—47 Bath List, &c.—never detains the patient a week in bed, and they soon get thoroughly hearty. We have not had one failure.

Case of Long-standing Chronic Rheumatism in Knees.—Gentleman, aged 35, both knees greatly enlarged and crippled. This case first under surgeons, and by the use of the usual blisters, ointment, purgatives, &c. &c. was brought into a helpless state, and the liver and stomach greatly disordered. Went then to a cold water establishment, where they spouted cold water on the knees, trying to get vitality where little existed, and so overpowering the little left; then iodine and general cold water treatment; but from all the allopathic treatment, and the cold water not being calculated to aid the work of nutrition, the patient got worse, and came to us. First his knees 220, and legs in dry spongio. Then liver and stomach treatment and 165, 172. Knees after a time began to discharge fetid matter for months, reducing the knees to their natural size, and taking away the hard swelling which extended up the thighs. When the discharge from the knees had ceased and the effusion of lymph absorbed, then used dry wash-leather, damping it in any part that adhered, wearing wash-leather till the old skin had peeled off and the new skin sound; then continued dry wash-leather for a long period, until vitality got into the knees.

Directions for chronic rheumatism, or where the joints are set fast, and yet there is no pain or inflammation.—Keep spongio piline on the parts affected, damped with tepid water; or if this cannot be procured, wrap the joints up in new flannel, and three or four times a day remove this, and have the parts rubbed with cold water and the hand for three minutes at a time; and where the skin can bear it, put a little mustard in the water, and rub with that. If the patient be strong enough, let the limbs be put under a tap or spout for one minute, and then have them well dry rubbed with the hand till warm; or give a little dry mustard and hand rubbing, chillie paste very beneficial. For general treatment, see cases in this book; use also 148, 149, 237.

Directions for rheumatic cases, where there is inflammation and pain in the joints.—Steam them over boiling water for twenty minutes three times a day, and sponge with tepid or cold water afterwards; and keep them packed with calico strips (see List, No. 214). When you cannot get steam, foment, as in List, 144; also fomentation pack, No. 46, to the whole body twice a week would be highly serviceable; also spinal slapping occasionally, or hot mustard baths to the

limbs for ten minutes, with a tepid wash after. Regularly morning and night have the whole body sponged over with tepid water, and regularly wear the body-bandage, with flannel over it, if cold.

"I have got a son about sixteen years of age, who has become a cripple from the effects of rheumatic fever. The knee-joints are enlarged, diseased, and fixed, and have been so for near two years; also the bone is diseased below the knee, from which there is a little discharge; also the ankle-joints are stiff and rigid. Mr. Walker, of Matlock, had some conversation with you last winter about his case; he was then too ill for the journey. His health has gradually improved, and we are very anxious for you to assist us to enable him to stand on his legs. Please kindly give us your advice, if you think you can relieve him, and I will bring him to your appointment. An answer will much oblige."

Advice given.—Apply our treatment for Chronic Rheumatism.

Swollen knees and ankles from chronic rheumatism.—Put feet on hot water tin, then use the cold spouting for one minute; then well dry-rub till warm. Then spout again for two minutes, and dry-rub as before, first putting a little glycerine or neat's-foot oil on hands; do the above once a day. At each treatment during the day rub in a little neat's-foot oil or chillie paste, and wear dry spongio on knees and ankles underneath the flannel bandages.

"It is feelings of pleasure and a sense of duty that dictate these lines. I am afraid words will fail to express my sincere gratitude to you for so kindly answering the letter from my sister, and also as being the direct agent whereby your work on Hydropathy came within our reach, being lent for a short time by a former patient of yours. Our attention was soon drawn to the common-sense reasoning to be found in it. We were not long before an opportunity came to try our faith and your plans. On of my sisters commenced her third attack of rheumatic fever. (I may here state that we had Dr. ——, one of the leading physicians, at her first attack, which was accompanied by extreme debility and suffering with her head.) She had six leeches applied to her temples, and was blistered behind her ears; in fact, she has had close upon a hundred, continuing it for several years. At her second attack we were advised to call in Dr. ——, supposed to be clever in rheumatism. He managed to keep her in bed six or seven weeks, and strongly deprecated both the bleeding and blistering. He painted her heart with iodine. We have since consulted another doctor respecting her, who says she should never have been painted, bled, or blistered. We have had nine doctors to the family at different times, and they all appear to hold crotchets of their own. We followed your advice as near as we could, and she was able to leave her bed in seven or eight days. She seldom or never enjoys good health, and it is our intention, if circumstances permit, to send her to you this summer. Immediately on her recovery I was taken ill with an attack of small-pox. My parents being alarmed pressed me to have a doctor, but having seen good results from your treatment I refused; and putting faith in your treatment, was able to leave my bed in eight or nine days. The treatment brought the pock fully out all over my body. I shall not be pitted. I was no sooner nicely on the improve than my mother, from anxiety and over-exertion caused by my illness, had an attack of liver complaint, from which she suffers a great deal. We again consulted your simple remedies but for a day or two had our faith severely tried, the pain shifting about so. We managed, I believe, to follow it, relief generally being felt after your remedies; in fact, this the seventh day from commencement of attack, and she is now able to go short walks; so in an incredibly short time we have had wonderful proof as to the efficacy of your treatment. We have the fortune (or perhaps misfortune, as far as regard those chapters relating to the cure of disease) to be possessed of several works on physiology, which I have been fond of reading, but have never been so deeply impressed before. Your article on temperance will no doubt prove a blessing, as my mother, a sister, and myself intend signing the

pledge. I shall feel it my duty to recommend your work at every opportunity."

SCIATICA, or rheumatism in the sciatic nerve, which takes its rise in the hip, and runs down the back of the thigh and leg to foot (see cut). Great numbers are cripples from this cause, and not a few have been made so by the unnatural methods used by surgeons for their cure. Nothing but restoring the nutritive powers by baths and packing can ever restore life and power to the limb; and blistering, lotions, or scarifying only aggravate the disease and increase the inflammation, and not unfrequently cause thickening of the cartilage in the thigh joint, and thrusts the bone out of the cup, putting the limb what is called out of joint, never to be got in again.

SUBCUTANEOUS INJECTION OF MORPHIA is now the fashion or fancy of the medical profession, to give temporary ease, to the certain ruin and misery of the patient.

SCIATICA, AND SCIATICA LEG CASES.—These cases are very necessary in severe or chronic sciatica, and of use in all. The severe pain striking downwards from the hip to the knee or ankle is only to be removed by renewed vitality and warmth to the part; and as it is impossible to bandage the part as in other cases of rheumatic affection, we have adopted cases made like the two halves of a pair of drawers, but separate, and to tie round the waist, the case to come down nearly to the ankle, using only to the leg affected, if not both affected. To be made of thin mackintosh or oil-silk, lined with flannel, quilted and made to fit round the hip, and to the leg, the flannel slightly damped, but not wet: the object is to produce a moist warmth, but it must be warm. Another very superior, but more expensive, is waterproofed swan's-down calico alone. If the leg-case does not produce warmth, put on some flannel strips round the leg under the case, and if any one part is very painful, spongio piline damped on the spot under the case, or fastened to the case inside. All wrappings must be made to fit, to prevent the air getting to the part, as constant warmth is necessary for cure. Vary the applications as Bath List 153½, 214, 220. As to general treatment and diet, see Index. There is always great want of vitality before sciatica comes on, and in the course of the ailment abstinence from stimulants, tobacco, coffee, is requisite. Diet, 210. Baths most used, 70, 52, 59, 47, once or twice a week; 89 using suds and sitting in as long as comfortable; wrapping leg up same time in warm pads, 141, 143, 140, 186, 163, with 172 or 169. The less exercise the better, till all pain is gone. The foot of the leg affected is generally cold, showing want of circulation, and must be kept warm by 153, 153½, 195, and hot mustard foot-baths. After any treatment, a good deal of gentle dry rubbing with hand, using also dry mustard, chillie paste, or glycerine, or dry hand alone. Friction must never cause pain. After pain is subduod, continue wrappings on for a considerable time; if crisis comes on, use crisis treatment (See Index). Chillie paste very good.

CASE OF SCIATICA AND RHEUMATIC FEVER.—A labourer, about twenty-six years of age, of sound constitution, from exposure to hardships, and keeping on his wet clothes, was attacked with sciatica in the right hip. He applied to a surgeon, who not only gave him advice and medicine free, but gave him money for food; and doctors do such kindnesses more frequently than the public know of. The tongue showing a bad state of the stomach and liver, and the bowels being constipated, alterative medicines were given, and good diet prescribed. This plan, however, only aggravated the evil, as purging the bowels gave no nutrition. The man leaving off medicine, and the summer weather coming on, got better, but not well. He went to harvest work, got soaked with rain one day, slept in a barn at night, and next morning found himself too stiff to work at all, and with excruciating pains in his limbs, he

was removed home to a town a few miles off. The doctor was now employed by the parish, and pronounced it rheumatic fever. Physic alone was the only remedy attempted, except a pint of porter per day, with flesh-meat, which was, of course, adding fuel to the fire of inflammatory action, already so intensely burning through the poor fellow's muscles and joints. Morphia was given to ease him and give sleep. He was told to keep his bowels open by the medicine prescribed, if they did not move freely every day. Such treatment, being diametrically opposed to the fundamental principles of the life and health of the body, soon set the doctor fast to know what course next to adopt. He recommended him to the county infirmary, and a nobleman gave him an in-patient's admission ticket. Here the man was put to bed, and kept there during three weeks. He was freely purged with medicine, sometimes the bowels operating two or three times a day for the first month. A hot-water bath was ordered twice a week; the man had one, but was so prostrated with it that he told them he should die if he had another, as he could not now stand at all unsupported, so this was given up. After he came out of the hot bath, he was wrapped in blankets, and put to bed, and the perspiration was so profuse that the man said a canful of water might have been emptied into the bed. Doctors have, it seems, yet to learn how Hippocrates, the great founder of their order, many hundred years since, stopped excessive perspiration, when enough had been produced, by washing the body in cold water. Had one of our tepid shallow baths, or tepid dripping sheets, been given after the hot bath, the man would have reaped great benefit, instead of the injury he received by such excessive sweating in so weakened a frame. Chronic inflammation commenced in the eyes, and so severe was it in one, that the doctor said he feared it would result in the loss of sight. This was entirely caused by the weakness of the frame. The object in allopathic treatment really appears to be to get all the life out by sweating and purgatives, under the idea of purifying the system, but the body dissolves under such cleansing. An M.D. and the house surgeon assiduously attended the man. The physician told the man that unless he got better soon, he must, according to the rules of the institution, discharge him as incurable. The man replied he could not help it, and must submit. One more plan was tried by way of rousing worn-out nature, and drawing inflammations out, and that was a large blister right across the bottom of his back; it rose well, discharged well, but, as in the Earl of Derby's case 200 years ago, still, mysteriously to the doctor, it did no good, nor was it likely to do.

Now, let it be remarked, that all this is the usual routine treatment for such cases, rich or poor; for the man had been under two eminent surgeons for months before he went to the infirmary, and at the infirmary he had attention and advice equal to any in the land, by surgeons and physicians too, and the best diet, warm rooms, and hourly attention; in fact, such that is not to be had at the ordinary homes even of those who can afford to pay physicians. The case was a failure, given up as hopeless. Not one plan had been tried in accordance with Nature's laws of nutrition; all had been forcing her to act; attempting by compulsion to eject the inflammatory action, without regarding Nature's complaint of the gross usage administered to the wonderfully delicate complicated structure of the body. The man was advised by one of the surgeons to get to my Free Hospital. He applied; I happened to have a vacancy, and he was at once removed from the infirmary bed to my hospital, with difficulty and much suffering; a perfect skeleton, and in intense pain. We began by appealing to the stomach and bowels with hot fomentations; then washed the body over with hot soap and water; then gave a tepid wash, drying with a sheet, and put on a wet body-bandage and spinal compress; then packed the limbs in strips of wet calico, with dry over, then covering up with mackintosh and flannel. In twenty-four hours the man

felt considerable relief; his natural feelings told him he had got on a new and more comfortable track. Soon he slept well, without narcotics, which had been given freely before; and thus, after three weeks' treatment, he was free from pain; the severe inflammation in the eyes soon getting well, as the tone of the stomach improved; and at the end of that time he walked to and from the Hospital, up and down a high flight of steps, alone, to join our morning service, his appetite became good, and the bowels acting naturally, and only requiring time to become a strong man again. He gained weight and strength every day. He had not a grain of physic, nor a drop of mixture, except what our cook made in the shape of porridge, pudding, &c., and only water, and milk, and weak black tea to drink. I could point to scores of such cases, now well, and some of them the servants of wealthy people, who, nevertheless, decline to countenance hydropathic practice. The very great gratification, however, in being instrumental in the restoration of our fellow-creatures to health, and imparting spiritual consolation at the same time, fully repays us for any worldly sacrifices: the possession of millions of money could not be put in comparison with it.

LUMBAGO (from *lumbus*, the loin). A rheumatic affection of the muscles about the loins. The hydropathic treatment is exactly the same in principle as for rheumatism in other parts. A patient, about 55, rather stout, general good health, but with a dyspeptic tongue, from want of the daily application of water to the skin and whole body, and not using the wet body-bandage for constipation, but taking a little physic instead, from extra over exertion, and the stomach of course participating in the derangement of the system, was suddenly seized with severe lumbago pains; he wrote to me for advice, and, after a little relief at home, came to my establishment. I treated the case first for derangement of the digestive organs, endeavouring to soothe the pains in the back by our fomenting pads and hot can, which soon gave some relief; but until the stomach can be put right, the pains will not be got rid of, as it is simply mucous inflammation, which Nature, true to the self-preserving principles of the frame, endeavours to throw off from the vital organs on to those parts which do not interfere with existence. Treatment first in the morning:—Nos. 144, 12; put on a large piece of spongio piline, sprinkled with hot water, over the loins, where the pain is, and over that No. 163 or, if no spongio at hand, No. 168; remain in bed till the pains are relieved. At 11 o'clock, have large mustard plaister over the loins, as long as it can be borne; wipe it off with dry cloths, and then have No. 141; and at 4 in the afternooon have 93, 19, keeping on the leg-bandages, with plenty of flannel over, all night, mustard plaisters to the feet, one and a half inches broad, and bound on with dry calico bandage and flannel. No flesh-meat, or any stimulants or coffee, but little food, and that of a simple kind. The following morning, if pain is yet severe, repeat the previous day's proceedings, and remain in bed; but if it is abated, begin at 7 o'clock with 13, 10, 12, and keep on only the spongio and body bandage; rubbing the loins every time previous to putting on the spongio with hand and tepid water one or two minutes; at 11 o'clock, No. 144, and do not disturb the body more until 9 o'clock at night, unless the pain is severe, when, if that is the case, put on dry hot fomenting pad over loins, and one in front, and dry hot fomenting can for one hour or longer; afterwards rub the part with hand and tepid mustard and water, then sprinkle the spongio with hot water; replace it and the body bandage wrung out of tepid water. Chillie paste rubbed on the loins good.

When the pain is relieved, rise and sit in easy-chair; but the less the back is used, the sooner the inflammatory attack will subside. After the first two days, and if the attack is subsiding, have No. 19; keeping on spongio and body bandage for a week or more; and when leaving it off, have dry flannel or, what is better, No. 168. The part will be very susceptible to cold for a considerable time. If any return of the complaint, use No. 64, and the bandages and spongio. No. 168¾, 220, or 174, and a flannel wrapper over it, night and day, will soonest

get the stomach and bowels in order after the first severity of pain is over. After the attack has subsided a week, get to No. 19 twice a day, No. 51 once a week, No. 39 once a week; then go on ordinary home treatment No. 168¾ should be worn for several weeks. The complaint must be treated as a stomach disorder, and live accordingly; after meals, No. 76 or 77 is useful; No. 59 is useful, instead of fomentation, after the first day or two, and may be repeated several times in the week, if the person is at all stout.

ALLOPATHIC TREATMENT OF RHEUMATISM.—It may not be uninteresting or uninstructive to give some extracts from the standard authorities of the day as to the opinion of the medical profession, both of their idea of the nature and causes of rheumatism and their mode of attempting cure. The same distinguishing line of action, it will be seen, is adopted as in all their attempts to restore failing or fallen nature;—strong purgatives, calomel, &c., bleeding, blistering, burning with moxa (*see article on this in Index*), seton, issues, opium, &c., "*cupping, blistering, and active purgatives long and steadily continued*" (*Hooper*); and when the continued effects of such means show the natural result on the sinking frame, then "*stimulants and tonic medicines*" are tried for a time, to be succeeded by the previous plans. In all cases of chronic rheumatism, says the article, stiffness of the joints is to be dreaded; and so recommends exercise. *This has made permanent cripples of thousands; for all experience proves that the more a rheumatic joint is used the stiffer it becomes, and the more painful;* nevertheless such advice is still given, and being by the profession followed, until regret comes too late. Hooper in another place says, that "*Rheumatism is aggravated by motion!*" "*In all cases pain is, if possible, to be relieved, and generally opium will be found the only effectual remedy.*" Now opium can stupify, but not give renewed vitality, and it does infinite mischief elsewhere, according to their own showing. We remove pain by our fomentings, bandages, &c., bring out the inflammation on to the surface, not by burning with moxa, &c., but simply by causing more vitality in the part; and this will always throw off morbid or inflammatory matter, at the same time relieving the stomach, not poisoning it with "*full and free doses of calomel,*" followed by black draught, scouring the poor bowels and the liver. Where are Sir Charles Bell's and Dr. Hall's discoveries recognised in all this? Where is the vis vitæ or power of life regarded? The body might be some automaton machine, that required polishing, cleaning, and patching; and not muscle, mucous membrane, glands, and the curious variety of tissues, &c., all acting and existing by the undefinable yet undeniably existing nervous fluid or electricity, which the same practitioners show us holds all the gas, and water, and silica, and salts composing the body in its form and gives it life.

SPRAINS.—Whilst pain continues, attend to No. 58 Bath List three times a day, and 214. After pain is gone, and the joint is only *weak*, then attend to No. 17 three times a day; and instead of No. 214 apply a piece of spongio piline on the part, and dry flannel bandages around affected limb to stimulate circulation in the whole limb. If any crisis appears during the above, omit the treatment, and apply 173½ till it is over; 150½ will also be very useful for crisis. When the crisis (*rash or boils*) is gone off, and the part only feels weak, rub cod-liver oil on twice a day with the hand, or chillie paste, and keep the damped spongio piline on for some time; this also promotes circulation and vitality in the part. If the above does not relieve, use 220, and apply 153¼ occasionally.

SPRAIN OF WRIST.—Scarcely a day passes but we have cases of the terrible effects of the destructive allopathic treatment. A workman came to me this morning from Sheffield. He had sprained his wrist at his work. The usual murderous applications were applied—blisters and tight bandage—till the joint is very near fast, and in another week or two the man would be a cripple for life, and without the use of his right hand. I have sent him to our hospital to have his hand, wrist, and arm steamed, and then poulticed, and afterwards damp

spongio put on. When the poultice has been on a few days, the man's hand will be saved, but it will take many week's steaming and fomenting, and immersing in warm meal and water to cure. This case was thoroughly cured.

WOUNDS WHICH ARE SLOW TO HEAL, or when there is scrofulous or bad matter in them, and strong inflammation.—Adopt pack 223 Bath List, but only for the part affected. For instance, if disease on leg, then place the bricks prepared as in 223, one on each side of leg and one for foot, and let them be so placed that the limb can be moved a little whilst in pack, to avoid being burnt by the hot bricks being in constant contact on one place, so that the pack may be continued an hour or two without fatiguing the limb by its being in one position so long; and when it has thus been well sweated, remove the packing, and sponge well but carefully with warm soap-suds and then tepid water, then re-dress the part quickly to keep it from the air. As regards the dressing for such wounds, the 220 on Bath List should be attended to till Nature is beginning to heal, and the parts are free from discharge; then, instead of the bag-poultice, use wash-leather or silk webbing doubled two or three thicknesses, according to the degree of matter running from the wound, the leather well damped with hot water and laid over the wound where poultice has been, and continue the spongio and dry flannel dressing as before, over the leather. The pack 223, as described above, may be repeated safely two or three times per day, as long as the part sweats well, but when the sweating becomes less, then the 223 must not be taken so often or so long, but attention must be given to keep a change of the dressing, so that the part may be kept quite clean and damp, or the process of healing will be checked. On removing the leather, squeeze some tepid water into wound, and sponge all round the parts affected.

OLD INJURIES OR WOUNDS FROM BROKEN OR DISLOCATED LIMBS, OR HUMOURS.—The effect of the hydropathic treatment in restoring parts which have been formerly injured is very striking, and shows the sound principles upon which it is based. It is an ordinarily admitted axiom in the medical profession, that the quicker the tissue of the body is replaced, the more healthy and vigorous it will be; and that the new healthy tissue thus formed will not bear the presence of effete or morbid matter, but will quickly expel it. We have had a number of striking cases of this description. In the case of a lady, whose arm had been broken four years before, and which had been weak ever since, although apparently restored, a crisis came out after a week's bathing on the very part where the fracture had occurred. This crisis discharged, then threw off scaly eruption, got well, and the arm was restored to its normal vigour. At the same time (as a matter of course, and, in fact, the cause of the restoration of the arm) the whole frame was invigorated.

Another case of sprain of the ankle joint of years' standing, and which, as usual, had been treated as a local ailment, it being bearable and useable, and therefore left to be cured by time, as the heating lotions and blisters did not appear to strengthen it. In a few weeks after our treatment for general health, the ankle became swollen and inflamed, and then began to suppurate; appetite improved, spirits raised, with a new feeling of comfort in all the frame, except the suffering part under process of renewal. This cheered and gave confidence until restoration was completed. This is natural cure; not the effect of science, but simply studying and following Nature's laws in keeping the pores of the skin open, cleansed, and healthily stimulating the suffering member by artificial warmth, cleansing away the morbid matter as it exudes, so as not to allow it to be offensive to the new granulations forming; attention to plain simple food, good air, and good water, following Nature's hints, not forcing her to submit to man's ideas of what results his pharmacopœia and materia medica practice ought to produce. No, Nature will not be dictated to; she has secrets in her laboratories (the glands, &c.) where she forms the delicate compounds man cannot imitate. He is sure to put in too much of one thing or another, or

not the right material at all. He aims by mixing up tonics and purgatives, sedatives and stimulants, to hit the mark, but always fails in giving nutrition with the nasty stuff he administers. Our custard puddings, roast beef, and forest mutton distance the utmost stretch of his genius, with the London Pharmacopœia and Materia Medica to boot.

The advantage of a proper use of hydropathic treatment is shown by the effects it produces in other parts of the frame, except where vital injuries have been sustained by bleeding, setons, physic, &c., and even in these cases a great deal can be done to prolong life and make it more comfortable, and the body more efficient; this is a great boon to the sufferer. By the other principle of practice, there is no chance of a radical cure being effected. We could give a large number of cases of injuries being thus cured or relieved, and have always such cases in our Establishment. An elderly member of the Society of Friends, recently returned home cured, came to the Establishment quite broken down, the lower part of the legs dark and inflamed, and an issue set, from which exuded offensive matter to such a degree that he was offensive to himself and banished from the social meetings of friends. The doctors said the offensive matter was the safety-valve for the preservation of life, and if stopped, would be in danger of death. And believing the doctors' prophecies true as to the direful consequences of the discharge ceasing, agreed to have the legs discharging stinking matter for the rest of life. When told the discharge would not only be stopped, but health would be renewed, and the legs made whole, was incredulous. He did wait; the case was made whole.

So many cases come to my recollection that it is impossible to spare time or space to record them; but if any reader wishes to prove the truth of the statements, we will give them references to persons who will gladly testify to the blessing of the treatment used.

ULCERS.—After active suppuration, or where the discharge has been slight for a considerable time, it is not advisable to excite action in the part, as Nature has become weak in the part, and unable to do more there. In these cases the quieter the part is kept the better; and attend to the general health, or bring out crisis over stomach and liver, to draw away morbid matter from the system. To this end, if the ulcer is still open, apply a simple cereate plaister. After covering the place with this plaister, put over spongio, flannel, or wash-leather, damped to keep the part warm. Dry rub with hand, or mustard and water, over the parts near. If in the knee, rub the leg and thigh, and bandage the leg to promote circulation. Give Home Treatment (see Index), with 50, 48, 69, 114, 73, 59 occasionally; if not very weak, use 165, 172; but if this not warm, use 169.

ULCERS, WOUNDS, and Rheumatic Pains in the Legs and Thighs. Put the legs into a leg bath 90 deg., cover the parts affected. The object of this bath is to act as a stimulant, and may be taken for an hour, and sometimes longer. It always accelerates the process of granulation, and causes an abundant suppuration, and consequently quickens the discharge of morbid matter out of the system. The same bath is also applicable to any other members of the body afflicted in a like manner.

ABSCESSES.—First wash with common yellow soap and water, and if in a part where steam can be applied, let it be steamed for twenty minutes; if not, foment with hot water for the same time; but neither steaming nor fomentation must be very hot, as, if too hot, it will rather irritate than soothe. Then apply No. 151, or if much inflammation, use 220. Keep it from the air as much as possible; steaming three times a day. We now find wash-leather best, applied instead of crisis calico as No. 151. As abscess is only the result of some constitutional disturbance, treatment to renovate the general health should be applied, at the same time with the baths and the plain diet, recommended in this book, but no stimulants. I have seen abscesses forming in the glands of the neck, and elsewhere, absorbed and prevented from coming to a

head by simply wearing damp spongio piline, and giving a few fomentations, not very hot, and attention to diet and baths.

(*Discharge from an old wound.*)

"I take the liberty of asking if you would be so kind as to favour me with your advice respecting a little discharge which proceeds from the inside of my left foot. Three years ago I had an abscess on the part referred to, which, I expect, was caused by a blow with a cricket-bat some time previous. I was under medical doctors for a considerable length of time. Finding my foot did not improve, I tried the hot-water treatment with the desired effect, excepting one little spot on my ankle-bone, which never perfectly healed up, and keeps discharging at intervals. I occasionally apply hot-water fomentations, linseed poultices, and sometimes a tight calico (dry) bandage to disperse the humour but as yet nothing I have tried permanently cures my foot."

(*Advice given to the above.*)

Hot water treatment or linseed poultices too drawing. Keep the part quiet. Wrap the part in wash-leather squeezed out of warm water; put over that oil-silk and flannel; rest it as much as possible, and if painful immerse the leg to calf in warm water with oatmeal in, for ten or fifteen minutes, especially at night, and keep the part and foot warm. (See Home Treatment in book. No stimulants or tobacco; 163, 233 Bath List useful.)

(*Wound in leg.*)

"I got a wound in the back of my leg, a little above the ankle joint, with a reaping machine, three weeks since next Saturday. I have your book on Hydropathy, and have followed the directions you give for wounds, and it has relieved me from pain; but my foot swells if I put it down awhile, and I often have a prickly feeling in my foot and ankle. My leg and thigh have shrunk, and it appears likely to be some time before I shall be able to walk with it. I use a crutch and stick to walk from one room to another. I should feel greatly obliged if you could give me a little advice. I should like to have come to Matlock, but my means are such that I cannot afford it. My age is 36."

(*Advice in above Case.*)

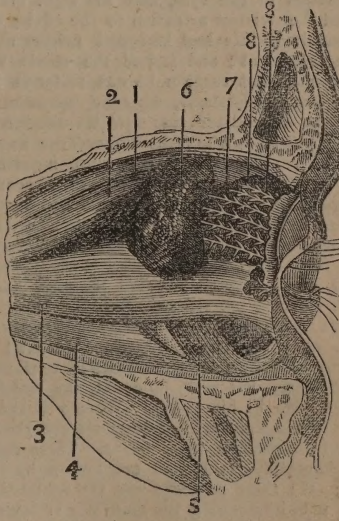
TREATMENT FOR INFLAMED AND SORE LEGS.—Immerse them in meal and water just a comfortable heat, and keep up that heat for three hours, two or three times a day, or even, if very bad, all day will be best, and at night or when not in the above immersion, put on whole leg a poultice made with linseed meal, and on the top of this have a legging made of spongio piline, mackintosh, oil-silk, or water dressing, whichever most convenient. Continue whole of above treatment till nearly well, then adopt 173½ to complete cure. No stimulants, medicine, or tobacco. Use 48, 113, 233.

EYE BATH.—Eye-glasses are sold at the druggists'; the application of them is as follows. For weak sight, without inflammation, fill the glasses with water 60 degrees, and in a stooping position, to keep the water in. Then raise the head with the glasses fitting over the eye, and open the eye-lids to allow the water to come in contact with the eye-ball. Keep the glasses on five minutes, then change the water; and while changing, let the eyes face the strongest light. Thus go on applying water in the same way five minutes longer; repeat this three or four times a day; after a few days use only cold water. If convenient, pack the forehead with a piece of calico wrung out of cold water, and oiled silk over, during the application. Inflamed eyes treat as follows:—Use head bath cold or rather

tepid; foment the eyes and forehead for ten minutes with hot flannel pads, wrung out of water as hot as can be borne, while using the head bath; then pack the forehead as above with wet calico, and apply the glasses, with water 70 degrees to commence with for three minutes, the next three minutes 60, and then three minutes cold; and in changing the water, open the eyes and face the light. When the inflammation is subdued, then treat the same as for weak eyes; for accidental injury apply the same.

The patient must not be alarmed at the eyes becoming much bloodshot by the use of the glasses at first; this is producing the desired effect by stimulating the circulation, and will subside in due time. At bed-time foment the eyes with hot water five minutes, then pack as above with wet calico over the forehead, and two pieces of damp spongio over the eyes for the night. The ordinary method of shading the light from weak or inflamed eyes is highly injurious, and often results in permanent injury. As inflammation of the eyes is often a secondary symptom, showing inflammatory action in the stomach or other viscera, diet and other precautions are absolutely necessary for recovery. Avoid all stimulants; adopt the diet recommended in this work, wearing body-bandage; and take the usual cold or tepid dripping sheets, and sitting baths as for ordinary health. If there is much mucous inflammation shown by the red tongue, &c., more active general treatment will be required before the eyes can be restored to healthy action. (See Bath List, 227.)

THE ANATOMY OF THE EYE.—In Fig. 422 the motor muscles and the

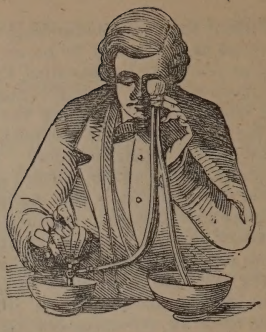


1, Muscle which raises the eyelid. The tendinous expansion of this muscle has been cut away to display the palpebral portion of the lachrymal gland covered by it; 2, muscle which directs the optic axis upwards; 3, muscle which directs the axis outwards; 4, muscle which directs the axis downwards; 5, muscle of unascertained use; 6, orbital part of lachrymal gland; 7, palpebral part traversed by four ducts of orbital part, and sending into these small ducts or canalicules; 8, 8, accessory ducts proceeding exclusively from the superior border of the palpebral part; 9, another accessory duct with three lobules.

Fig. 422.

lachrymal gland of the right eye are shown by the removal of the lateral bony parts of the external side of the socket.

TREATMENT FOR STRENGTHENING THE EYES.—After curing the inflammation by the use of 227, and thus preventing a recurrence of the inflamed state, attend to 205½ twice a day, and rub chillie paste into nape of neck and behind each ear, and always at night keep a piece of damped wash-leather, doubled in four, and a silk kerchief over them. (See Bath List, 226½.)



Eye and ear douche we find very useful. Savory and Moore, inventors, 220, Regent Street, London; or through any chemist.

CASE OF BLINDNESS.—A gentleman, residing in London, about forty years of age, came to our Establishment to ask if, in my opinion, hydropathic treatment could do anything for the restoration of his eyesight. He had for some years suffered from inflammation in the eyes, and his sight gradually became weaker, though he had observed the strictest attention to the advice of surgeons, physicians, and oculists he had consulted. He had hesitated neither at expense nor self-denial, but all ended in disappointment; and indeed the result was a worse calamity than weakness of sight—for the last surgeon he was under in London ordered a blister to be applied entirely over the forehead, with the intention of drawing out the inflammation, and as soon as this blister *rose well*, he became totally blind. It was the last outrage Nature could submit to; the blister drew away the life of the nerves, never more to be restored. He has been ever since hopelessly blind. I could do nothing for him but invigorate his general health, which became excellent; and if this treatment had been applied earlier, I have little doubt but his sight would have been good. He had been suffering for many years from acidity, and consequent inflammatory action of the mucous membrane of the stomach, liver, and bowels; and the eyes were, as a matter of course, affected. The doctors applied their nostrums to the head, by cupping, often blistering behind the ears, and at top of spine, and salivating, until the last eminent practitioner, thinking he would try the front part of the head, and carry his attack on the inflammation by blistering nearer the centre of mischief, gave him a *coup de grâce*, and received his fee! Being a certificated practitioner, and using the lawfully authorised rules of warfare against disease, he came off not only without blame, but with, no doubt, the satisfaction to himself of having tried every orthodox plan in his power. When will the College of Physicians throw aside the dogmas of the London Pharmacopœia and the Materia Medica, by which all surgeons admitted to practice must swear. These codes of cure of disease have been laid down generations back, and are known by the profession to be fallacious in many points; still their mixtures and the application of them to disease must be acknowledged, notwithstanding the absurdity of laying down laws for all present and future times, ignoring all progress in scientific knowledge of the human frame in its requirements in disease.

When will mankind shake off the superstitious regard they have for old-established usages, and think for themselves, and compare the practice and principles of not only surgeons and M.D's, but of other professionals who are educated with an idea that they possess a right, by virtue of their diplomas or orders, to assume an infallible authority over their fellow-creatures? This poor gentleman, from over-studying,

weakened and deranged his general health. His vis vitæ drawn constantly to the brain to keep up the stimulus there for study, the nutritive process was partly stopped. The optic nerves, in common with every other part of the body, were decaying, and not being replaced until attenuation amounted to that degree that they were incapable of conveying the sense of sight from the nervous centres in the base of the brain. All the nervous system sympathised; and when, on examination of the patient's habits of life, the doctor could easily see a cause for the ailment, why did he not look to restoring the nutritive powers, instead of prescribing a directly opposite course, draining the life further out? The patient has been a man of most strict moral habits all his life, and guilty of no excess. Stimulants and good living were ordered by one, abstinence by another; then either of these courses was condemned by a third, and so on; it was all striking in the dark, until the poor gentleman's readings were put an end to by total blindness.

DEAFNESS.—We have succeeded in curing or relieving cases where it has resulted from weakness of the nerves, or low power of the excretory ducts, by using general invigorating treatment, and the use of Bath Nos. 134, 135, 136, also 58, 220 in night, and damp spongio all day; the 58 should be applied with the gutta percha steaming pipe, which is supplied with the portable steamer, and is very easily done (see cut); the ear douche (see cut) should be used gently, with 80 degrees water, directly after steaming; and if in cold weather, a little animal-wool put in ears, moistened with a little olive oil or glycerine, or dry, to keep up the warmth in the ear till the mucous lining is restored. The object of this treatment is to restore the secretion of the healthy waxy mucous; care should be taken to keep the glands under the ear warm till the ear is strong.

In some obstinate cases of deafness hard wax forms in the ear, which the ordinary ear douche will not reach, and in two cases the ordinary medical syringe has been used with as hot soap and water as could be borne, when rolls of hard wax have been dislodged and the hearing restored; but this should be done by a surgeon, as the incautious use of it might do injury. The great point in deafness is to keep warmth about and under the ears, wearing lamb's-wool in moistened with olive oil. The ordinary treatment, as described in the previous article, has restored great numbers. Plunging in the sea, or cold baths, or sponging the head with cold water, lays the foundation of deafness in many cases.

EAR-ACHE.—Use 135, or lay first one ear, then the other, in head-bath, with soap-suds, 95 degrees, five minutes; then apply the dressing, as in 151, to each ear; repeat either of these remedies as often as pain requires.

The following is a short extract, and two cuts, from Lardner:—

The Ear consists of three distinct compartments, differing extremely from each other in their form. They are named by anatomists according to their order—proceeding from without inwards—the *external*, *middle*, and *internal* ear.

The External Ear.—The part of this division of the organ visible on the outside of the skull, behind the joint of the lower jaw, is called the *pinna* or *auricle*. Proceeding inwards from the concha, the remainder of the external ear is a tube something more than an inch long, the diameter of which becomes rapidly smaller; its calibre is least about the middle of its length, being slightly augmented between that point and its connection with the middle ear. Its section is everywhere elliptical, but in the external half the greater diameter of the ellipse is vertical, and in the internal, horizontal. This tube does not proceed straight onwards, but is twisted so that the distance from the concha to the point where it enters the middle ear is less than the total length of the tube. The external part of the tube is cartilaginous like the external ear, but its internal part is bony; the bony surface, however, being lined by a prolongation of the skin of the auricle. *Membrane of Tympanum.*—The internal extremity of this tube is inserted into an opening leading into the middle ear, which is inclined to

the axis of the tube at an angle of about 45°. Over this opening, which is slightly oval, an elastic membrane, called the *membrane of the tympanum*, is tightly stretched, like parchment on the head of a drum. In Fig 435 the several parts of the ear are shown divested of the surrounding bony matter; and to render their arrangement more distinct, they are exhibited upon an enlarged scale. The concha, with the tube leading inwards from it, marked *a*, terminates at the inner end, as already stated, in the tense membrane of the tympanum placed obliquely to the axis of the tube. The resemblance of this tube and the concha to the speaking or hearing trumpet is evident, and the physical purposes which it fulfils are obviously the same, being those of collecting and conducting the sonorous undulations to the membrane of the tympanum, which will vibrate sympathetically with them.

The Middle Ear is a cavity surrounded by walls of bone, which, however, are removed in Fig. 435, to render visible its internal structure. An opening corre-

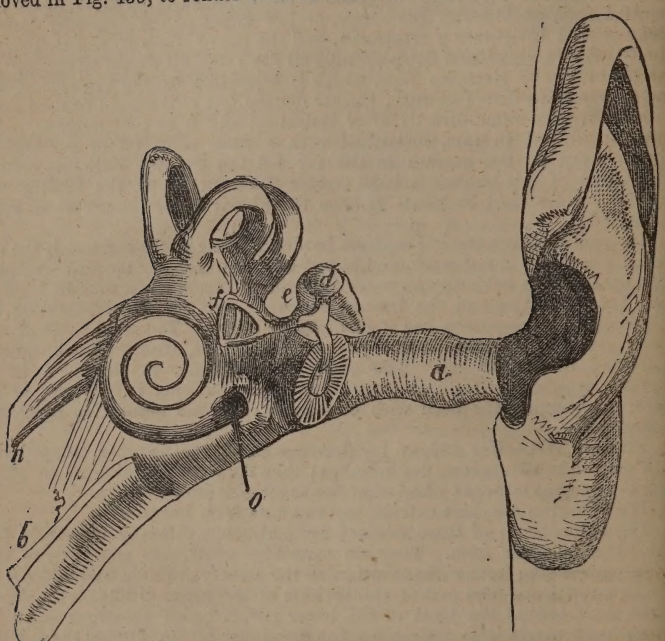


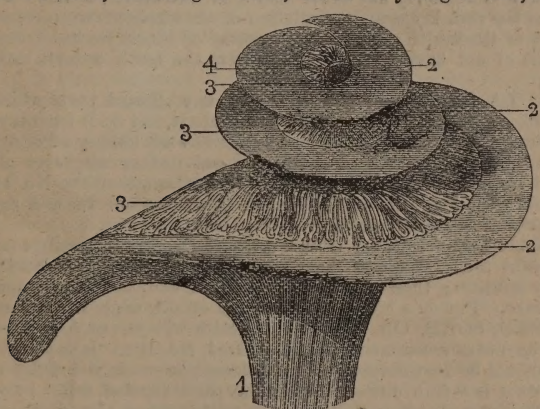
Fig. 435.

sponding to the membrane of the tympanum is made in the external wall and the external part of the inner ear shown in the figure is part of its inner wall. The inner and outer walls of this cavity are very close together; but the cavity measures, vertically as well as horizontally, about half an inch, so that it may be regarded as resembling the sounding board of a musical instrument, composed of two flat surfaces, placed close and nearly parallel to each other, the superficial extent of which is considerable compared with their distance asunder. This cavity is kept constantly filled with air, which enters it through a tube, *b*, called the *Eustachian tube*, opening into the pharynx, and forming part of the respira-

tory passages behind the mouth. Without such a means of keeping the cavity supplied with air, having a pressure always equal to that of the atmosphere, one or other of two injuries must have ensued; either the air in the cavity, having a temperature considerably above that of the external air, would acquire a proportionately increased pressure, which would give undue tension to the membrane of the tympanum, and perhaps rupture it, or the air confined in the cavity would be gradually absorbed by its walls, and would consequently be rarefied, in which case the pressure of the external atmosphere being greater than that of the air in the cavity, would force the membrane of the tympanum inward, and ultimately break it. By means of the Eustachian tube, however, a permanent equilibrium is maintained between the air in the cavity and the external air, just as is the case in a drum, or in the sounding board of a musical instrument, where apertures are always provided to form a free communication with the external air.

In the inner wall of this cavity there are two principal foramina, a greater and a lesser; the former being called, from its oval shape, the *fenestra ovalis*, and the latter the *fenestra rotunda*; the former is shown at *f*, in Fig. 435, and the latter at *o*. Over both of these elastic membranes are tightly stretched, as the membrane of the tympanum is over the inner end of the external meatus.

Between the membrane of the tympanum and the membrane of the fenestra ovalis there is a chain, consisting of three, and in the young of four, small bones



PERSPECTIVE VIEW OF THE SPIRAL LAMINA, WITH THE FILAMENTS OF THE AUDITORY NERVE UPON IT, DIVESTED OF THE COCHLEA.—*Sappey.*

articulated together, and moved by muscles having their origin in the bones which form the walls of the cavity.

The Internal Ear.—We now come to consider the internal ear, which is, in fact, the true and only organ of the sense of hearing, the external and middle ears being merely accessories by which the sonorous undulations are propagated to the fluids included in the cavities of the internal ear.

The internal ear is a most curious and, as it must be acknowledged, unintelligible organ, also called, from its complicated structure, the *labyrinth*. Its channels and cavities are curved and excavated in the hardest mass of bone found in the whole body, called the *petrous*, or bony part of the skull.

Within the three semicircular canals are included flexible membranous tubes of the same form, called the *membranous canals*. These include within them the branches of the auditory nerve, which pass through the semicircular canals, and

they are distended by a specific liquid called *endolymph*, in which the nervous fibres are bathed. The bony canals around these membranous canals are filled with another liquid, called *perilymph*, which also fills the cavities of the vestibule and the cochlea. It appears, therefore, that all the cavities of the internal ear are filled with liquid, and it must, accordingly, be by this liquid that the sonorous undulations are propagated to the fibres of the auditory nerves. The liquid being incompressible, the pulsations imparted either by the auricular chain of bones, or by the air included in the cavity of the middle ear, or by both of these, to the membranes which cover the fenestra ovalis and the fenestra rotunda, are received by the liquid perilymph within these membranes, and propagated by it and the endolymph to the various fibres of the auditory nerve.

TOOTHACHE.—If the teeth be decayed, extraction is the only cure; but if the cause be rheumatism, hold tepid water in the mouth until it begins to grow warm, then change it; at the same time, the face, cheeks, neck, and parts behind the ears should be rubbed vigorously with the hand and cold water, frequently dipping the hands into the water. It is well also to rub the gums till they bleed. Cold foot baths and hand baths will also be found useful, as will packing the face also with wet and dry calico and plenty of flannel; but it is only wasting time to try any other plan than extraction, if there is decay in the teeth, as the pain keeps up an irritation of the whole nervous system, to the great injury of the health; serious and protracted illness we have often seen to be the result of not having resolution to have the tooth or teeth extracted at once.

SCROFULA CASES.—Where there are any affected parts which can be immersed, attend to 148, putting a little meal into it, and do it from two to three hours at a time; when not in treatment, keep wet wash-leather all over part, and flannel bandages over, always renewing the wet leather whenever at all dry. After the above process has removed the inflammation, then the No. 118 once a day, alternate with 148, and gradually take the 118 alone twice a day. Give general constitutional treatment during this local treatment.

TOE-NAILS grown in are often a cause of disease, not easily cured by the ordinary means used. We find them soon cured by steeping first in hot soapsuds twenty minutes; then cut the corner off the nail, and keep the end of the nail cut square. Put on a bit of wet linen and oil silk while any inflammation.

CHAPPED, SORE, OR ROUGH HANDS will be cured by persisting in the use of the means recommended in Bath List, No. 192. It is of consequence the hands should be kept covered with the damp gloves night and day till well.

RINGWORM is a skin disease. Keep the parts affected damp by wearing a piece of wetted spongio piline over them, or wetted calico, spongio over; general treatment as follows:—On rising, have No. 13; and afterwards a shallow, 80 degrees; or sponge over; or No. 14. Forenoon, well soap the head with hot soap and water, and then sponge, or pour over it tepid water. Afternoon, or bed-time: a gentle vapour bath, and tepid shallow; or sponge over; or tepid dripping sheet after foment pack. If the parts affected are well soaped over every time the spongio is damped, will accelerate the cure. Wear the wet body-bandage, No. 163, during the night, and a dry flannel during the day; abstain from all stimulants, and from flesh-meat or coffee until well.

ITCH.—This troublesome disease is soonest cured by the application of sulphur ointment all over the body, and before it is renewed have a thorough hot soaping with common yellow soap; about two dressings are sufficient, and any druggist will supply the ointment: the disease is easily communicated by the living animalculi, which burrow under the skin. When the itch is removed, vapour baths, spirit lamp, a hot soaping shallow, will prevent a return; care should be taken to have any garments worn thoroughly purified.

SOLD FEET.—An invariably successful and perfectly safe remedy in all cases is to put on a pair of cotton socks, wrung out of cold or tepid water, with a pair of thick lamb's-wool over, and to sleep in them. Wash the feet in cold or tepid water on rising. We also apply cotton gloves wrung out of water, with dry woollen ones over, and in some cases wear them night and day; they draw circulation to the hands, to the relief of other parts. (192 to 195, Bath List.) Darlow's "Skuasma" (see Advertisement, end of the book), very effective.

BACK WASH.—The person sits on a board across the sitz bath, or a tub, in which is some cold water; the attendant takes a towel, dips it in the water, and throws it open on the shoulders and back, drawing it downwards, and keeps renewing it in the water; apply this for two or three minutes. It is very strengthening and refreshing to the back, and a very mild application; and in cases of head affection, have the feet in hot mustard and water. (See Bath List, 120, 121.)

BODY-BANDAGE OR WET COMPRESS.—This is our sheet anchor in most cases of disease, and also for ordinary slight affections of the stomach, bowels, or kidneys. For those in ordinary health, it may be worn or thrown off at pleasure without any risk of cold. It will keep up vital heat in the body when lowered with fatigue; or, in case of having fatigue to go through, it will be found highly useful and always safe to use. (See Bath List, 163, 168¾, 233 to 236.)

TENDER FEET.—Put feet in warm meal and water for ten or twenty minutes, several times per day; then use 195 Bath List every night.

SWEATING FEET are cured by frequently washing the feet in warm soap and water, and at night sleeping in cotton socks wrung out of tepid water, and woollen socks over them.

APOPLEXY.—This is a formidable, and often fatal disease, to which all who indulge in intoxicating liquors, high feeding, and indolent habits, are liable. The doctor frequently wards off the blow for a time, where he is at hand to apply to, by administering his purgatives, and using the lancet and leeches, but which remedies nevertheless ultimately shorten life; and unless such subjects give up all stimulants, and live plainly, and take proper exercise, the result will, eventually, be ruinous to the frame. I have personally known not a few who have suddenly passed into eternity by this disease, and who had warning after warning, which, if attended to, would have saved their lives. But no, they trusted to the doctor's skill, and to his nostrums, to enable them to live in defiance of Nature's laws. The bleeding and physic make sure work with the body sooner or later, according to the frequency of their application, and according to the speed the patient lives. The burden of all my subjects in this little work must be, again and again, "Sow not to the flesh," for if we do, we shall most assuredly reap corruption, and, may be, everlasting ruin and misery. But numbers will be led to the slaughter, and for what? For sensual gratification, which can only leave regret behind. The subject is of great importance to many preparing themselves for this disease, by indulging in what is improperly termed good living, *i.e.*, excess in eating and drinking, especially at Christmas, and other times of feasting which regularly come round, and where many inventions to torture the stomach for the gratification of the palate are brought on the table, and it is not considered good manners to refuse to partake of what has cost the host so much money. I think it best first to give the following quotation from one of the standard authorities, showing the nature prevalence, causes, and effects of apoplexy, and then to add remarks from my own experience of not a few cases which have come under my observation. Dr. Hooper, in his celebrated work, "Lexicon Medicum, or Medical Dictionary," says, "Apoplexy, from the Greek, '*I strike or astound*,' so called from the sudden and violent invasion of the disease. A sudden abolition, or great diminution, of the powers of sense and voluntary motion, the patient

lying in a sleep-like state; the action of the heart continuing, as well as the respiration, which is often accompanied with a stertorous sound. The fit of apoplexy is frequently attended with convulsions of one side of the body and paralysis of the other. The disease has also been called *Morbus attonitus; Attonitus stupor; Sideratio.*"

Dr. Hooper says, "The predisposing causes of apoplexy are in general such as impair the energy of the brain, or occasion too great a determination of blood to the head, or impede the return of blood from the head. Plethoric, corpulent persons, with a short thick neck, are very liable to apoplexy. Excess in drinking is one of the most frequent predisposing causes."

After he has stated that the predisposing causes of apoplexy are in general such as impair the energy of the brain, and cause determination of blood to the head, he goes on to describe his remedies, which are precisely what ordinary observers would think likely to aggravate those causes by lowering the vital energy, as will be seen from what he proposes in the following quotation from his Medical Lexicon, and which is the standard and only authorised system recognised by the College of Physicians. The doctor says, "In the treatment of apoplexy, if we be consulted during the existence of the precursory symptoms which have been noticed as frequently taking place, we shall often been able to ward off a paroxysm by bleeding, purgatives, perfect quiet, and, in the sthenic variety, a reducing regimen. Where, however, the state of the pulse, and other symptoms, give proof of weak vascular action and nervous debility, depletion should be practised with caution; and purgatives will often be found preferable to blood-letting. Yet, whatever be the degrees of debility, if there be drowsiness, vertigo, and a dull pain in the head, we must have recourse to bleeding, either local or general; for such symptoms will assuredly lead to a fit, unless timely subdued."—Hooper, page 155.

Now from his language he is evidently afraid that the weak vascular action and nervous debility may not bear bleeding, so he recommends scouring the poor bowels, and forcing their delicate absorbents to take up his aloes and calomel, and carry such stuff into the circulation, instead of some natural aliment. Bleeding and purgatives to prevent a disease, which the faculty says comes on from want of vital power in the vessels to propel their contents easily and freely! Surely, it is to be hoped they will discover some method of prevention and cure more in harmony with common sense. Bleeding and purgatives can never give nutrition or vital power; yet vital power is according to their wants. To avert these calamities is directly contrary, but they lower and extinguish it. They do not assert that there is too much blood in the body, but that it is determined in excess to certain weak vessels. Now, instead of drawing blood by cupping, leeches, &c., from those weak vessels, which must necessarily, as the circulation goes on, be surcharged again, as soon as the viscera can manufacture more, and thereby leave the *cause* of disease in action, we endeavour to divert this excess of blood to other parts of the body, and to keep up a continual determination to those other parts until, by more natural living, the whole circulation is regulated, and the relaxed veins in the brain have had time for recovery. These vessels have long previous to the attack had an unnatural pressure upon them, either from lowered vitality, especially congestion of the liver, and consequent constipation, but purgatives are sinuous, or by want of exercising the frame, or indulgence in bad propensities, which has prevented free circulation of blood through the brain, and hence pressure and often rupture of some veins.

Lowering the vitality, or the electricity in the nutritive nerves, by which alone every artery or vein propels its contents forward, must, on the slightest reflection, independent of prejudice, appear the most unlikely treatment to succeed in restoring. Nature's laws have been by some means outraged by the subject of the attack, and it is only by acting on this consideration, and returning to the strictest course of living those laws demand, which is so highly necessary to the

brain, that any material or permanent restoration of the proper circulation can on sound principle be expected; for the blood-vessels in that part have not the capabilities of extension as in other parts of the body, where they may be greatly distended without danger to life, or even much inconvenience. The least pressure in the brain is felt, and if any of the minute and delicate veins are from this pressure ruptured, apoplexy and paralysis are the certain consequences, more or less. I wish to caution persons, however, from being alarmed at headaches, for if they are not living in any excess, and have not good digestion, the greater probability is that the cause of their uncomfortable feelings in the head proceeds from nervous sympathy of that part with the stomach. I have seen most distressing cases of headache and heaviness there cured entirely when the stomach has been put right. The person's course of life is the guide to judge if there is danger of apoplexy.

Non-professional and non-medical writer as I am, I have since I searched into the principles of the nature and action of the human frame, been much struck with the great disregard and non-acknowledgment of some of the fundamental laws of existence by medical men in their ordinary practice of physic, in attempting to cure or alleviate the diseases of the frame. The wonderful discovery that the life of the body, and all its functions and powers of nutrition, depend, under God, entirely on the vitality and electricity of the nervous fluid, nervous power, vis vitæ, or power of life, or whatever the life in the body is, or can be described by, in the ganglionic or organic nerves is as established and undisputed a fact as the circulation of the blood. I have frequently noticed this in this work, and it is a consideration that cannot be too much kept in view in all attempts either to keep the body in health or to cure disease; for it is an incontrovertible fact that on the vis vitæ, or electricity of the organic nerves, depends the life of the body, and the power of adding to the muscular tissue, out of the blood. The functions of the liver, the kidneys, and, in fact, every principle or minute action of the body, in regard to life and nutrition, depends on the vitality of these nerves, which carry their nervous fluid or electricity into every minute part of the frame, and by that electricity the organised body lives; only lower this to a degree, and the life is quenched as effectually as the light from a taper when it is blown out.

This fundamental law, once discovered and proved true, as it long has been by Sir Charles Bell, and others who have made such important discoveries in physiology, so greatly beyond the discoveries of ancient physicians; ordinary observers might naturally suppose such would be the fundamental principle on which medical men would always and at all times act. They acknowledge it in cases of severe injury. They refuse to operate with the knife when this power is evidently very low. They have little hope of what is termed a constitutionally nervous subject getting through a severe operation. They have little hope of a patient rallying when they see this nervous power all but extinguished. The difference between the flesh and the bone of the weakly or nervous patient and that of a strong person is not regarded. The consideration with the doctor is not whether the fibre of one body is finer or coarser than another—no, he looks at the amount of *life* it contains; and that governs his hopes or his fears for the restoration of his patient.

It is true some are scrofulous, and have impure flesh; and he will tell you these patients are bad subjects for operations; they make bad blood and bad tissue. Ask him why, and he tells you (if he knows his profession) that there is a want of vital power in these subjects to properly assimilate the food—to expel morbid matter,—to vigorously renew the worn-out tissue,—in short, to give life to the frame. All his arguments end in the acknowledgment that it is not the want of more flesh, or of a different texture, but of *life* in it,—that is, the nervous fluid,—the electricity by which the body exists;—all else is mere gas and water, and silica and salts, held together by this wonderful vis vitæ, or nervous fluid.

A patient has just arrived on the verge of an attack of apoplexy, who was secure from seizure after he entered my Establishment, because we set to work immediately to stop the causes of the symptoms, and by determining the blood to other parts of the frame by our fomentations, bandages, sitz baths, foot baths, &c., and regulating his diet. He had been what is called a regular man, I believe, addicted to no excesses, of fully-formed frame, and apparently healthy-looking. He had erred simply from want of knowledge of the true conditions of health and life; and this information is just what I hope my book will give to numbers, and save them suffering misery and premature death. This patient had taken flesh-meat in moderation three times a day, his glass or two of ale at dinner, and the same at supper, with a glass of wine occasionally, and now and then a glass of spirit and water, and cigar. He is not a man of an excitable temperament, and to all appearance would be supposed to enjoy good health.

He came with a friend to my Establishment, without any intention of staying on his own account; but he said he was troubled with an uncomfortable feeling in his head, which had been coming on some time. I soon convinced him he had no time to lose in avoiding an attack of apoplexy. This regular man had no conception that his regular habits could possibly be dangerous to life, but, as Dr. Cheyne justly observes, "The daily use of wine or spirits will lead a man of certain age and constitution to apoplexy as certain as habitual intoxication." * Plethoric corpulent persons, with thick short necks, are looked upon generally as the only subjects likely for apoplexy. This, as medical men know, is an error, as apoplexy occurs in spare persons and persons of delicate habits, from absolute weakness of the vessels in the brain, and from another frequent cause, and that is hypertrophy. Dr. Hope, in his work on Diseases of the Heart, says, "Eight or nine cases of suddenly fatal apoplexy, and numerous cases of palsy from hypertrophy, have within a few years fallen under my observation. In the majority of them, the patient exhibited what is commonly called the 'apoplectic constitution;' that is, a robust conformation, a plethoric habit, and a florid complexion; in others these characteristics were absent; but the total number of the cases of apoplexy from hypertrophy is much greater than I have witnessed during the same period of apoplexy from causes independent of hypertrophy." So that whatever makes imperfect or morbid tissue tends to this disease. Hypertrophy, from the Greek "above" and "nutrition," describes a morbid increase of any organ without change in the nature of its substance, arising from an excessive nutrition in some particular part. All these dissertations on the nature, symptoms, and effects of disease, by such authorities as I quote, lead me to reiterate the advice to study the natural conditions of health, and obey them without regard to the cravings of the body.

The many deaths of apparently stout persons from inflammation or fever is owing to the inefficacy of any allopathic means to restore circulation. Purgatives and blisters only further lower the nervous vitality, and tonics only stimulate to cause loss of power by reaction. The mischief is sometimes warded off, but always at the expense of the constitution.

Case No. 1.—Gentleman, apparently stout, age fifty, but from over-brainwork and severe family afflictions highly nervous, and sensitive to cold, even in summer; ringing sound in the ears almost constant, head stuffed, and a fetid discharge from the nose; all owing to brain irritation, aggravated by the common fallacy of the necessity of keeping the bowels open. This keeping the bowels open is a fallacious doctrine, that lays the foundation of disease in thousands; and, from being one of the cardinal principles of the medical profession, it is not surprising the public are of the same opinion. If the bowels were of the same material as copper or lead pipes, there would be sound reasons for scouring them

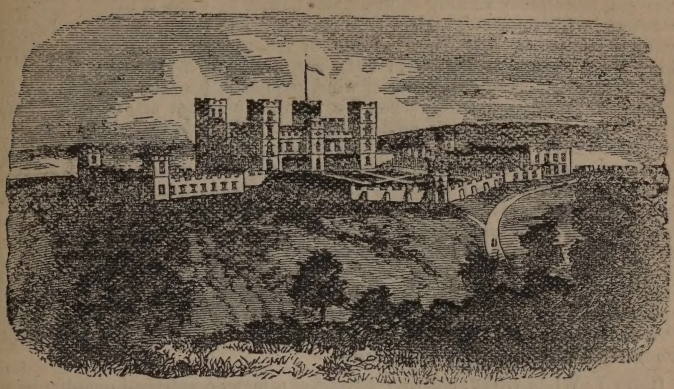
* Hooper's "Medical Dictionary," p. 152.

often; but as they have a mucous internal coating, to perform important offices in protecting the absorbents, blood-vessels, and nerves, it is very unadvisable to scour this away. I feel I cannot say too much to caution persons against using any aperients of any kind. We never use the slightest aperient of any nature, and never fail to get natural action of the bowels. Why do not the medical profession adopt similar plans? Ours are always successful, theirs never, in bringing on and establishing natural action. This patient only stayed a fortnight at my Establishment; when he came, water at 80 degrees gave him a shock; he soon bore the water colder, and got a deal of important information for his future guidance in diet, clothing, and habits of life. He informs me he is recovering his former good health.

Apoplexy is more frequent in males than in females, owing principally to the less power of heart action; for when there is congestion of the liver, &c., in females, the delicate tissues of the lungs and air-vessels give way sooner than the tissues in the brain. Treatment for apoplexy, or to avoid it, is the use of our means to get good action of the liver by our 48, and of the bowels by our 78½ on 233 wetted in night, our 234 in day; or 163, 174, if others too hot, or 236 all sprinkled slightly with water; 220 sprinkled with chillies under 163, with 169¼ in night good. To produce action of bowels and liver, 50, 48, occasionally, and "Home Treatment" good; 115, 115½, 137, 157, all to determine blood from the head. Very abstemious diet, little sugar, no suppers, no stimulants or tobacco; purgatives destructive; sea-bathing or any plunge baths or Turkish baths highly dangerous. Very few poor men are subject to apoplexy; poverty saves them, except when they get drink and tobacco.

I give farther on a few out of the many thousands of cases whose lives, or limbs, or reason have been preserved by our treatment the last twenty years, having had, as I have before stated, up to this date, March, 1872, upwards of 25,000 patients at Matlock Bank and Lea Mills Hospital. Without the least intention, or idea what our first action in this work would lead to, it grew on our hands; and when we tried to get out of it, as we did several times, from feeling the overwhelming nature of the work in mental anxiety and personal exertion, our way to decline it appeared stopped, without resolutely resisting the appeals from our suffering fellow-creatures, to whom we saw we could be of service; and so the work increased, necessitating our giving up all social visits, or rarely having friends at our home, or taking recreation of any kind, never having been absent for a day from our work for many years together. But the result has not disappointed us; success in service to our fellow-creatures has been unbounded, and in more cases than we can call to mind, when life has been apparently hopeless, or reason on the brink of ruin, we have seen perfect restoration to health and strength of mind and body, and in no instance have we to regret having used means which were mistaken or injurious, for in the most desperate cases we can always be certain of giving relief without risk of injury, where restoration was impossible; and in dying cases, we have the most gratifying recollection of having saved numbers from a painful death, but on the contrary witnessed the happy and easy departure of the spirit from the earthly tabernacle. I published a pamphlet of 90 pages on my first turning my attention to the practice at my hospital, Lea Mills, and shortly after Mr. John Gregory, of Chatsworth, came to me at Lea Mills, and requested me to take charge of him. He had had a stroke of apoplexy, followed by paralysis of one side, and was in a pitiable condition—brain congested, face drawn, and almost helpless. I said I was astonished he should think of coming to me, a manufacturer, in such a state, and that it was such a case far too serious for me to undertake. He said he had read my little pamphlet, and was so convinced of its sound reasoning, that he was quite determined not to apply to any doctor, and that I must take pity on his terrible misfortune. I could not resist his appeal. I began to treat him on the principles I state in my tract, first premising that the attack had come on from congestion, not of the brain, as

would be pronounced by any medical man; but that being a stout man, with strong heart action, congestion of the liver was the real cause of his attack. The strong heart action was against life in such a case, instead of being in his favour, as would be commonly supposed, for the strong action of the heart not being able to overcome the congestion of the liver, the weakest part gave way, and that in his case was the delicate tissues and capillaries in the brain; hence effusion on the brain, causing apoplexy and paraylsis. If he had been a delicate man, with weak lungs, hæmorrhage would have taken place, and saved him from apoplexy, to die probably of consumption. A late friend of mine, just as thousands are, was destroyed from his medical adviser taking a false view of such cases. Congestion of the liver brought on pressure on the brain, and instead of bringing more vital action to the liver, the kidneys, and the bowels, applied purgatives, then leeches and blisters, seton, cupping, &c., to the nape of his neck, when, in fact, there was no disease in his brain, but the heart going on pumping arterial blood incessantly, and finding obstructions, the weakest part gave way, and after several fits death was the result. We do not hear of delicate or weakly subjects having apoplexy. In Mr. Gregory's case I gave the most gentle treatment, to prevent the lesions in the brain being reopened, as death would instantly have ensued if that had been produced. The feet in hot mustard and water, with a pad wrung out of hot water to stomach and liver, to determine blood there, with a soaping over at 90 degrees, was our first operation; then our various treatment, as in Bath List, 48, 143—50, 141—70¾, 115¾, 115½, 137—163. 220 before and behind, sprinkled with chillies, with 169¼ over in night, 234 day, 215, 194, 159. Diet, 208. The result was perfect restoration to sound health, and the full use of his limbs. Nearly the same time a officer of Engineers from Bermuda, invalided for terrible tic-douloureux, which he had had twenty years, till life was intolerable, called upon me. I took him into our house, and he was cured in two months. The Government Inspector of Fisheries from Wick, N.B., came in the last stage of bronchitis. I hesitated, and began to be alarmed at the notoriety my little tract had brought upon me, but I kept him, and in two months he returned a sound man; and thus I went on till I bought a small house at Matlock Bank, with the intention of accommodating five or six patients at most, but success in every case rapidly brought cases, till I was at a loss what course to take. I tried to get a hydropathic practitioner to undertake the work, but the system I acted upon was so new that several I tried, not being able to throw aside their ideas of cold water treatment, and take a proper physiological view of cases, failed. Ladies began to come, and with great difficulty I persuaded my wife to undertake them. She was frightened at the responsibility, but when I persuaded her to study the laws of the life of the body, and gave her the same grounds for action as I acted upon, she soon got into the work—a work that, although giving her unbounded pleasure, bound her to incessant work and great anxiety.



RIBER CASTLE.

860 feet above sea level, 600 feet above the river Derwent at foot of the hill.

Like a blind spinner in the sun,
I tread my days;
I know that all the threads will run
Appointed ways;
I know each day will mark its task
And, being blind, no more I ask.

I do not know the use or name
Of that I spin;
I only know that some one came,
And laid within
My hand the thread, and said: "Since you
Are blind, but one thing you can do."

Sometimes the threads so rough and fast
And tangled fly,
I know wild storms are sweeping past,
And fear that I
Shall fall; but dare not try to find
A safer place, since I am blind.

I know not why, but I am sure
That time and place
In some great fabric, to endure
Past time and race,
My threads will have;—so from the first,
Though blind, I never felt accursed.

I think perhaps this trust has sprung
From one short word
Said over me when I was young,—
So young, I heard
It knowing not that God's name signed
My brow, and sealed me His though blind.

But whether this be seal or sign
Within, without,
It matters not; the bond Divine
I never doubt.
I know He sent me here, and still
Am glad, and, blind, I wait His will;

But listen, listen, day by day,
To hear their tread
Who bear the finished web away,
And cut the thread,
And bring God's message in the sun;
The poor blind spinner's work is done.

PARALYSIS, from the Greek, "I loosen, or weaken. "A disease known by a loss or diminution of the power of voluntary motion;" so says Dr. Hooper in his "Medical Dictionary." He also says, "it may be occasioned by an attack of apoplexy." It may be occasioned by anything that prevents the flow of the nervous matter from the brain into the organs of motion. He says, "the long-continued use of sedatives will produce palsy, and whatever tends to relax and enervate the system may likewise prove an occasional cause of this disease:" yet he recommends bleeding, blistering, and active purges; also, that "certain narcotic substances have been found occasionally successful, as aconite, arnica, toxicodendron, nux vomica, and opium!" Now, it is well known that narcotics, and purges, and bleeding, and blistering will not restore the power of nutrition,

and yet, in face of this forced acknowledgment of Nature's fundamental laws, doctors persevere in tapping the veins and letting out the vital fluid, and punishing the already sinking stomach and bowels by what is utterly opposed to nutrition, in the form of physic. One such case has just been at my Establishment; a gentleman fifty years of age, of sedentary habits, a tobacco-smoker, taking his allowance of stout and bitter ale, with flesh-meat two or three times a day, besides a moderate quantity of wine, regular in his attendance at his office in London, taking purgatives when his bowels would not act, to force them to do so; then by his doctor's advice taking a little sedative mixture when his overworked brain would not allow him to sleep well, here a pabulum and there a nostrum, and these were to stifle every complaint which poor Nature was making of the unnatural way in which she was being treated and doctored by the medical attendants of the patient, and afterwards by some of the first in the profession, until she could bear it no longer; for the sedatives, the purgatives, the lancet, and the leeches brought the poor patient into such an inanimate and lethargic state, with the partial loss of some of his limbs, and total inability to bear any mental work, that he was all but permanently asleep. When this climax was attained by the usual legitimate process of the profession, the patient applied to an M.D., one of the very first in London, and the following is his nostrum for raising the vis vitæ of failing nature:—

[Copy.] White vitriol, half dr. Extract of camomile, sufficient quantity to make twenty pills. Take one three times a day.—Tincture of valerian volatile, two oz. Camphor mixture, four oz. Take one small table-spoonful in a cup of water, with one of the pills as above.

This prescription was used a short time, but not accomplishing the end in view, was laid aside for the following:—

Calomel, one gr. Blue pill, two gr. Compound extract of colocynth, six gr. Extract of henbane, one gr. Mix in two pills, and take them at bed-time.—Infusion of senna, nine gr. Tincture of senna, two dr. Tartrate of potash, half dr. Manna, quarter oz. Spirits of nutmeg, one dr. Mix, for a draught to be taken in the morning.

This again gave neither new life nor vigour to the patient, and the following was substituted, which proved just as useless:—Citrate of iron, two dr. Distilled water and spirits of nutmeg, each one and a half oz. Mix them, add simple syrup, one and a half oz. Take one table-spoonful in a cup of camphor water twice a day.—Extract of aloes, eight or twelve gr. Powdered ipecacuanaha, two gr. Soap, twelve gr. Mix in twelve pills. Take one at bed-time.

This, being only a repetition of the former drug practice, made matters no better. When he came to me, he had such an amount of pressure on the brain, and was so sensitive to cold, with almost total constipation of the bowels from the long use of the "beautiful" and nice-tasted sedative mixtures having by long use done their legitimate work so effectually that he could not bear washing over in water under ninety deg. A few weeks' gentle fomentation to the stomach and bowels, tepid wash, with our soothing bandages, simple diet, fine air and water, and cheerful society, soon told beneficially on the grateful frame; but the poor patient is a wreck, and will never be restored to anything like sound health again. If he had had advice early, to obey the natural conditions of health, eating and drinking to live, and not living to eat and drink, and sleep, he would not have now been a burden to his relatives and himself too, and a hopeless case of restoration.

I hope to be of far more use in preventing disease than in curing it, and especially in such serious maladies as apoplexy and paralysis, which in most cases are not entirely curable, by pointing out the wisdom and duty of making the appetites subservient to the welfare of the body, a principle which too many have regretted they did not adopt before they were compelled to do so by their inability any longer to satisfy them.

Paralysis can only take place from the lowered vitality of the frame, or of the

electricity in the nerves of nutrition and motion, commonly called ganglionic, or organic, by which the nutrition and functions of the whole body are maintained and governed. The will of the paralytic is precisely the same in force as before the attack. The mind sends its messages for action from the nervous centres in the base of the brain, through the medulla oblongata at the top of the spine, by its telegraph wires (the nerves), but when they come to some part of the body where the motive nerves have been by various means deprived of healthy vitality, the nerves of motion (which take their rise as before stated in the spinal marrow, as shown by the engravings) will not respond to the stimulus of the nerves of sensation. The paralytic has often feeling in the affected parts, but cannot move them. There the nerves of sensation are perfect, but they are unable to stimulate the nerves of motion to act. In other cases there is neither feeling nor ability to move. Here the nerves of motion and the nerves of sensation, which alway accompany each other, are both deprived of vitality; hence the incapacity for either motion or feeling. The power of expelling or retaining the fæces and the urine often also participates in the calamity, and renders the retention of them either imperfect or impossible. I have often been told by my patients that they have a hereditary tendency to paralysis. It is not a hereditary disease only so far as inheriting a weakly constitution. But a weakly constitution, by a strict adherence to the natural conditions of health, and if kept also from the vitiating effects of improper stimulating food, liquids, over study, debasing passions, and the destructive influence of tobacco, snuff, opium, &c., will be free from any hereditary tendency to paralysis. In another place I refer to a lecture by Mr. Jolly, of King's College, on the tendency of tobacco to produce paralysis; apoplexy, loss of the use of limbs, madness, and suicide are very often the dreadful consequences of these excesses. I have had the great gratification of seeing not a few, who were all but wrecks from this cause, entirely restored by our mild system, and having a knowledge how to live in future.

Nature does not always take the body by surprise; for on questioning persons afflicted with paralysis, I have often discovered that they have had repeated warnings of their attacks in different ways. As the stomach rejects food when it has been outraged by bad diet, or other causes, and thereby gives unmistakable warning of the existing mischief and inability to perform its office, so flying aches and pains in the limbs, local numbness, cramp, coldness of some part, inability sometimes to lift weights from the weakness in the arms, cold shivers down the spine (which, as I have previously remarked, is the centre of motive and sensitive power), giddiness, oppression in the head, &c. When these symptoms do not actually incapacitate individuals for their usual avocations, they are often thought little of until they become urgent, or are attributed to rheumatism—that, to the multitude, undefinable term for many ailments. Whenever a person experiences the warnings I state above, they should at once study how they can improve their general health; and this can only be soundly done by strict attention to the natural laws of healthy condition of the body. Long before paralysis comes on, the tongue will be red, swollen, and often cracked, and white on the surface, red on the sides. When this is the case, serious mischief to the whole frame is threatened, and must inevitably be the result, if the causes are not removed. Our bodies, however, are not quite so frail that the derangement of some part or organ will always produce fatal effects. Though it is well for persons to understand their frame, I would caution them from continually studying symptoms of disease; as the mind, by continually dwelling upon such subjects, will often induce disease.

How many watch as anxiously for a motion of the bowels as they look for their dinner, and think that the daily recurrence of the one is as necessary for their existence as the other! The keeping up this mental agitation weakens the very nerves and organs they are so anxious to have in good order to act well. But some go to the other extreme, and take no notice of Nature's hints until

actual disease has set in. Business or pleasure cannot be interrupted; but Nature has borne the transgression of her laws as long as there was power in the body to resist, and there is a line beyond which the strongest constitution cannot go with impunity; for although we do not live in glass houses, we do not live in cast-iron ones. I have not unfrequently had patients who have said that they had white or furred tongues all their lives, or for ten or twenty years, and that there was no chance of that being cured; and although they have not had good health, yet they have not thought much of it. But I have said, "What, then, has brought you here? for persons don't come to have the water treatment and leave their business occupations for amusement." I have to point to their inability to sleep, to constipation, to rheumatic pains, to their yellow complexions and harassed countenances, and to their having tried for many years to get into a sound state of health by doctors' prescriptions, all without success. They come, in fact, just when Nature has given some of her last warnings; and instead of punishing the body by the unnatural means of physic, blistering, &c., I immediately see in what way we can soothe the outraged frame, and coax it into good humour again, by attending to the fundamental laws of health. And the instances are rare in which we find the appeal, by these means, to be entirely in vain.

Paralysis proceeding from apoplexy is the most serious, because there is then mischief in the very centre of consciousness, and generally rupture of some of the fine blood-vessels in the brain (see Apoplexy). Simple paralysis of some local part, as the arms or the legs, without any affection in the head, may be cured. In the spinal marrow, as before observed, the nerves of motion and sensation have their origin. These nerves may be slightly affected by accident, or simply by want of vital power, which is most commonly the case when there has been no affection of the head; and then by judicious bathing, diet, and changed habits, new life is generated, and the nerves recover their original powers. Here our practice of spinal rubbings, 114, 112, 121, 122, and 137, tepid dripping sheets, steamers, 47, 50, 141; 48 for action of liver; 19, 10, 12, 12½; dry rubbing; 24, 25, and 114, with chillie paste, 157; body bandages, 163 or 233, with our plain nutritive diet, and no stimulants, are such safe, natural, and effective remedies. The treatment must be proportioned to the strength of the patient; and if in cold weather or in weakly cases, have the water 70 deg., instead of cold. The plain diet, as stated in this work, with good air and water, assist greatly to restore Nature's powers. Warmth is absolutely necessary in paralytic cases; good thick clothing if the weather is not warm; and all who can afford would do well to migrate to the warm climates of Exmouth, Torquay, or Penzance, for the winter and spring.

Palsy being paralysis, only in a different form, we treat in a similar manner—steam baths, bandages, packing; also bandaging the limbs in No. 214. Spinal applications good, as Nos. 121, 112, 114; also 156. Dr. Hooper says of palsy:—

"When palsy attacks any vital part, such as the brain, heart, or lungs, it soon terminates fatally. When it arises as a consequence of apoplexy, it generally proves very difficult to cure. Paralytic affections of the lower extremities, ensuing from any injury done to the spinal marrow, by blows and other accidents, usually prove incurable. Palsy, although a dangerous disease in every instance, particularly at an advanced period of life, is sometimes removed by the occurrence of diarrhœa or fever.

"The morbid appearances to be observed on dissections in palsy are various lesions of the brain and spinal cord, more frequently the former. When found hemiplegia is a consequence of apoplexy, sanguineous effusion is generally to have taken place in the brain on the side opposite to that which is paralysed."

Treatment for paralysis—mostly spinal treatment, as 114, 112, 113, 128, 115, 115½, 115¾, 159—137, 157; and treatment to stimulate liver and bowels, 48—78½,

64—141—13, 10—14, 15—51—123, 124, 123—233 in night, 234 day; 220 sprinkled with chillies under 168¾ good. 214 to limbs, 44½, 141. No stimulants or medicine whatever; never mind inaction of bowels. Castor oil, or salts, or any purgatives destructive. Chillie paste rubbing very good (see Index).

"Matlock Bank, June 17th, 1857.

"DEAR SIR,—I have great pleasure in writing you an account of my illness, and the remedies I have tried in mitigation of it. I was first struck with paralysis in 1851. Within two or three hours of my first attack, I sent for my usual medical attendant. He shortly called upon me, in company with Dr. ——, his subsequent partner. Dr. —— at that time bled me, and subsequently administered a cup to my neck, and afterwards applied a seton to the same. In about two months' time I went on a visit to a brother-in-law of mine, a medical man in ——; with him I stayed a month or six weeks; and during that visit I twice went to town in my brother-in-law's company to consult the celebrated Dr. ——, a physician said to be great in paralytic cases. He only advised me to take a quantity of blue pill, get a pony to ride on, and to take an enema once every morning. The blue pill soon lowered the system, and made riding unsafe; the enema brought only temporary relief. In 1853 I was again struck whilst attending at the assizes. I then got the assistance of a friend of mine in the neighbourhood for that night, and on my return home I got the assistance of a fresh surgeon, who attended me till my coming here. He had the assistance of Dr. ——, a gentleman well known in ——, who, among other things, advised me *not* to give up my snuff (four or five ounces per week), as giving it up at once, he said, had killed a Mr. ——, a brother professional of mine.—I remain, dear Sir, yours truly, "——."

The physician referred to is one of the most celebrated discoverers of the nature, action, and reflex action of the nerves; and perhaps no man living is more thoroughly acquainted with the subject. How strange he could prescribe no more effectual remedies! He made little inquiry into the patient's habits, did not prohibit his taking snuff—a habit alone sufficient to induce paralysis—allowed stimulants, and failed in giving the least relief! Another physician advised the continuance of the use of snuff! The patient came in a deplorable state, unable to retain his urine, with his bowels constipated, and was deaf—all the result of the failure of nervous power, aggravated by the pernicious prescriptions of his doctors. He is now comparatively a new man, and will get quite well in every respect. All blistering, bleeding, setons, and purgatives tend not to strengthen and restore, but to weaken and irritate. The father of a boy afflicted with curvature and disease of the spine, with loss of the use of both legs, applied to me for advice. He stated his son had been under the care of several medical men, and in an infirmary, where issues were put in the poor creature's back; his sufferings became so intense the father removed him. From the first there could be no hope of restoration; and all the unnatural tortures of the nerves only aggravated the misery of the poor lad. How issues inserted along the spinal column, with all its delicate membranes and network of nerves, were to restore and give nutrition to the part, is past comprehension: but, in such way, thousands are ruined for life, or destroyed.

Case No. 17.—PARALYSIS.—The following case consulted me, and I gave him the prescription following the note:—"It is thirteen weeks since (*very unlooked-for on my part, as I am a thin, spare man*) I was seized with paralysis, from my hips downwards; I could not pass urine; was obliged to send for a doctor, and had to use an instrument for six weeks. I do now without the instrument, but have no command over my urine. The lower part of my bowels is also affected, so that I am obliged to take strong purgatives to get action of the bowels. At the first both my legs were without motion (*never without sensa-*

tion); now my right-side leg is useless, except a little from the hip, but on my left leg I can bear a little weight, and can move any part of it at will, although it is very much benumbed, and always feels—as is the case with my back—a sensation as if cold water was being poured on it. I am as well otherwise as I have been for years; I think I eat with a better appetite than I did before I was seized. I have for many years been at out-door work." *Home Treatment.*—9, 7, 115, 115½, 115¾, 112, 113, 114, 120, 121, 18, 19, 157, 137, 123, 16½, 116, 83, 86.

An essential condition of health and safety for stout persons is strict abstinence from all stimulants and medicine, especially purgatives, rich food or late dinners, and great abstemiousness in quality as well as quantity of food—open-air exercise as much as practicable. A friend of mine, with a herculean frame, sober and regular in his habits, gave up his walks to his farm on the moors when he got to about sixty years of age, and amused himself with his conservatory. His usual good appetite continued. He lived, as he thought, regular and moderate, but the want of fresh air and exercise brought on congestion of the liver, which brought in the doctor's calomel, blisters, cupping, and death, as a certain and natural result.

VACCINATION NO PROTECTION AGAINST SMALL-POX.

At the present time, when small-pox is destroying in London alone upwards of 200 weekly, it becomes the duty of every lover of truth and of his country to expose the utter uselessness of that detestable and unnatural practice which the people have been misled to regard as a sure protection, namely, Vaccination. That it is such a protection is only a groundless assertion of Jenner, a well-meaning but mistaken theorist, whose erroneous views have been servilely followed by a profession which prides itself on its learning and superior scientific attainments. There can be no excuse for medical men of the present day continuing the practice, seeing that a vast amount of facts have been accumulating year after year, and in various countries, showing that it really has no influence in preventing small-pox. It is true there are a few honourable exceptions among the faculty, practitioners of good personal standing, who have thought for themselves, and boldly opposed the wide-spread delusion. Even many homœopathic physicians—men who thought they discerned in vaccination a striking confirmation of their favourite doctrine, "*similia similibus curantur*," have discarded it as irrational and untenable. These men are the salt of the earth, whose names will be cherished by future generations as benefactors of their race, when the name of Jenner shall have sunk into well-merited oblivion.

What becomes of the mendacious assertion of Jenner, that one vaccination protects you for life; or of the equally false dictum of his modern disciples, that twice vaccinated, you are doubly protected, when we find at the present moment, here and in Paris, hundreds dying of small-pox who have been vaccinated, some once, others more than once? How comes it that 80 out of every 100 admitted into the Small-pox Hospital, and not less than 94 out of every 100 at the Hôtel Dieu and other hospitals of Paris, have been vaccinated?

It is admitted that on the average of recent years, in the experience of the London Small-pox Hospital, full *four-fifths* of the patients have been vaccinated. The Registrar-General tells us that on the average of four years only sixty-five per cent. of the English people were vaccinated, that is, less than *two-thirds*. The vaccinated *two-thirds* furnish *four-fifths* of the small-pox cases, whilst the unvaccinated *one-third* furnish only *one-fifth*; therefore the vaccinated are twice as liable to the small-pox as the unvaccinated.

Thousands of infant lives have been sacrificed at the altar of this *modern Moloch*, and infanticide has therefore been legalised amongst us. If vaccination were

abolished to-morrow, it would take generations to eradicate the mischief it has caused in the physical deterioration of the health of the nation.

Where is our boasted freedom, where the liberty of the subject, when parents, at the instigation of paid and hireling informers, are reluctantly and with sorrowing hearts *compelled* to submit their children to the poisoned lancet, and to have inserted in the pure fountain of life the disgusting and impure products of a disease of the brute creation?

When disease shall produce health; corruption, incorruption; darkness, light—then, but not before, may we hope to eradicate small-pox by vaccination.

SMALL-POX, like scarlet fever, or measles, is an effort of Nature to rid the body of irritant matter. We never lose a case by our treatment, providing purgatives and other drugs have not been used previously. Purgatives in such cases are almost certain death.

SMALL-POX CASE CURED AT LEA MILLS FREE HOSPITAL.

One of Mrs. Smedley's nurses, named Mrs. P——, a widow between 30 and 40 years of age, was sent to treat a case of small-pox at Sleaford, Yorkshire, which she managed very successfully as regards her patient; but when she reached the Matlock Station on her return, the pocks were quite visible on her own face, so she was immediately sent to the above Hospital, and treated by the same means; and so very severe was the disease upon her that she had twenty-one pocks upon her face alone; but so perfectly successful did the hydropathic remedies prove, that not a single mark remains, and she is now again special nurse with one of the lady patients in the Establishment, Matlock Bank, and the infection in her case was so prevented that not any further cases followed in the neighbourhood. Mrs. Smedley has at this time nurses out treating small-pox on similar plans, and each case proving this valuable remedy. We have never lost a case of small-pox out of the many treated.

TREATMENT FOR SMALL-POX IN CHILDREN.—As soon as there is any appearance of the eruption, give wet pack as page 47, with towel wrung out of water 90 deg., three-quarters of an hour night and morning, or as often as the fever rises; after pack, give the child a towel rubbing, at 80 deg., and put on wet body-bandage No. 163¼ or 166; continue daily packing until the eruption is fully out, then only sponge the body night and morning with water 80 deg. If fever should recur again, go on packing. This will carry the case through, giving barley water, or cooling drink, as receipt in this book, or arrow-root; no flesh meat.

TREATMENT FOR SMALL-POX IN ADULTS.—Soon as any appearance of eruption, give 47, Bath List; afterwards hot sponge over; take care not to expose the body to chill; no water under 90 degrees till convalescent. This pack is good to begin with, and occasionally, if fever rises high, repeat it. After this, put on 163, with 174 or 220 under it, over the stomach, and if not warm, 172 over all. In case of strong adults, 59 good to bring out the eruption. The principal point to aim at is to get out the eruption fully, and then using the above 47 or 52, when the eruption will shell off; take care not to get a chill, and mind diet. When face much attacked in this disease, be careful to keep on a wash-leather mask, damped with warm water, and renewed frequently. This will prevent irritation, and thus save the rubbing, which causes marks. And if the above is not sufficient to do this, then steam the face over boiling water for a short time before renewing the mask. No stimulants or medicine of any kind; castor-oil or any purgatives ruinous. Patient will soon be well; but if the eruption is not brought fully out, and care taken not to drive it in, ill effects will follow, as weakness of the eyes, deafness, &c.

OUR NURSE'S ACCOUNT OF A CASE OF SMALL-POX.

"On the 22nd of December I was at S—— P——, having returned a few days previously with Mrs. ——, who had been some while at Mr. Smedley's Hydro-

pathic Establishment. The upper housemaid complained of being very poorly, and was sick and feverish. The family doctor said she was subject to the attacks, as she had an internal complaint; I felt sure that she was sickening either for fever or small-pox, and told Mrs. —— so. On Christmas-day I felt convinced it was the latter, and early on the 26th I gave her a full pack; the doctor came and examined her, and then went down to Mrs. ——. I said to him, 'Now, sir, what do you say it is?' 'Oh, sickness, attended with fever.' 'And what about the eruption, sir?' 'Oh, that arises from the state of the stomach, and is owing to the complaint from which she suffers." 'Now, doctor,' said I, 'will you please to come back with me, and pass your hand over her leg, and you will find that the spots are filled with matter underneath, and I say it is small-pox.' The doctor returned, re-examined the girl, and said, 'You are right, it is small-pox, and I fear a bad case.' He then asked me if I was afraid to undertake it. 'Not a bit of it, sir,' I said. On Wednesday I gave her another pack, and made a mask of water-dressing for her face, which I kept damp with tepid water; changed her clothing, ventilated the room well, and purified it and the linen with sulphur fumes—this I did daily. On Thursday you could not put a pin's head down clear of the pocks. On Friday she was blind; still she was nicely from fever, and on the improve in many respects. The doctor saw her and said, 'She will be worse again; the fever is sure to return.' I replied, 'Excuse me, sir, but fever never returns with Mrs. Smedley's treatment.' I gave her another pack. On Monday the pocks became irritable, and began to die. I washed my patient all over with warm soap and water. This I repeated twice the next day; and on Wednesday I sponged her with warm vinegar and water. In a fortnight she was so far better as to be able to walk in the garden; when she was removed to her uncle's while the rooms were properly cleaned. She is now (January 18th) quite better, and able to begin her work again. She will not be marked in the slightest degree. I worked by Mrs. Smedley's Manual; she has never lost a case.

The Small-pox in Paris.—A Paris correspondent of the *Daily News* says:—"The small-pox, after gradually declining in Paris for the last two years, has now utterly disappeared from the bills of mortality. There is not a single case in the last death returns. And yet in this country there is no compulsory vaccination, and during the war and the Commune, re-vaccination, in favour of which there was a feeble movement at the beginning of 1870, almost entirely went out of fashion. The reward of half-a-crown, which the mayors are prepared to give to any poor woman who brings her child to be vaccinated, finds few takers among the classes which entertain a prejudice against the Jennerian specific. It is very perverse of unvaccinated Paris to be free from small-pox while the disease rages in vaccinated London; but here are the hard facts, which I leave doctors to reconcile with their absolute theories."

(*As it is not reasonable to expect the opinion of a non-professional on these important matters will be believed, it has been my object in my work to gather the published statements of M.D.'s and surgeons, some the most eminent in their profession. The following is quoted from the Parliamentary Blue Book, and therefore cannot be disputed. The statements are most damaging to the profession, showing in the treatment of disease where life is at stake, they have absolutely no principle, and act upon all in random practice.*)

SELECT COMMITTEE ON VACCINATION ACT (1867).

Members present:—Dr. Brewer, Mr. Jacob Bright, Mr. Candlish, Mr. Alderman Carter, Mr. Stephen Cave, Sir Smith Child, Mr. William Edward Forster, Mr. Hibbert, Mr. Holt, Mr. Muntz, Dr. Lyon Playfair, Mr. Taylor. The Right Hon. William Edward Forster, in the chair.

Mr. James Furness Marson, F.R.C.S., recalled, and further examined.

4624. Mr. Caudlish.—I wish to call your attention to a passage in an article contributed by you to a System of Medicine, edited by Dr. Reynolds; you are speaking of a form of small-pox designated *corymbose*, and at page 229 you say, "Of 104 cases of *corymbose* small-pox admitted into the hospital 29 were unvaccinated, 74 vaccinated, and one was after inoculation; of the 29 unvaccinated persons 13 died, or 44 per cent.; of the 74 vaccinated 32 died, and, deducting two who died of superadded disease, there remains a mortality of 41 per cent.; the single case of *corymbose* small-pox after inoculation died; it will thus be seen that *corymbose* small-pox is in all cases a very fatal form of the disease, and brings life into danger nearly as much in vaccinated as in unvaccinated persons, varying only about 3 per cent.:" the point to which I wish to direct your attention is, that in those cases vaccination seems to have been no protection; is that so?—It so happened, I suppose, that it was not; those were not materially modified cases, I dare say, but the form of the disease is a very severe one, and is in itself probably the most severe form, save the malignant or hæmorrhagic form, that we see; patients seldom recover from that form of the disease, but the cases are very few; there have been 104 cases only admitted into the hospital in thirty years.

4625. But amongst those cases 44 per cent. of the unvaccinated died and 41 per per cent. of the vaccinated, the total number of cases being 29 unvaccinated and 74 vaccinated; that is so, is it not?—Yes; *corymbose* small-pox is a singular form of the disease; a great many medical men in this country have never seen it at all, and do not know it, and some have come to the hospital on purpose to see it because of its rarity.

4626. I suppose that it may be concluded as ascertained that against this form of small-pox vaccination is no protection?—The protection would seem to be very small, but the cases are not many, and it might happen that those cases were not very well vaccinated.

4627. You add, "Why this mortality among the vaccinated it is impossible with our present knowledge to say, and it is probably one of those things which will for ever remain inexplicable;" you concur, I presume, with all sound thinkers in the belief that we have yet much to learn in reference both to vaccination and small-pox?—Yes, I think that it is likely we have.

4628. Dr. J. Bright.—In answer to Question 4148, as to the past and present modes of treating small-pox, you say, "I fear we have no control over the disease; there is no specific; we have no power whatever of controlling, I think I may say, either small-pox, scarlatina, measles, and the eruptive diseases;" does that correctly represent what you said?—I should correct that by saying that we have no power of controlling the febrile eruptive diseases.

4629.—Is that so in your opinion, or is it the opinion given by the profession generally?—It is the opinion held by the best-informed in the profession generally, I believe, so far as the small-pox, measles, and scarlet fever are concerned. It might be limited to those diseases, and a few others of the febrile eruptive class.

4630. Has the College of Physicians no knowledge on the subject with regard to the treatment of those diseases?—Not as regards stopping the progress of the disease. We can perhaps do some good, but we cannot stop the progress of the disease, nor is there any specific for curing any one of the three diseases which I have named.

4631. Then you evidently think the profession is (I think I may say) absolutely powerless with regard to the treatment of those diseases; if so, is it as powerless in regard to the treatment of other diseases?—Certainly not; that is a different thing altogether. Those are specific diseases which run a certain course in spite of anything that can be done to prevent them. I ought perhaps to have said that the only check we have is vaccination upon small-pox. There we have a very great check

upon the disease, but one which is of no use after the disease has commenced. That is the point.

4632. After having attended upwards of 13,000 cases of small-pox, is it the case that your experience has not enabled you to give to the profession any information with regard to that disease which is likely to serve them in their private practice?—Not much, I am sorry to say, in the medicinal treatment, because we cannot control those three diseases.

4633. Then you do not think that medicine is of any use whatever in controlling this large class of diseases which carried off no less than 64,000 persons in the year 1869, according to the Registrar-General's account?—Medicine *per se* may not be of use, but vaccination has an amazing power over small-pox, which is one of those diseases. It is often wished that we had a similar check to scarlatina.

4634. But with regard to the other diseases, medicine has no power in controlling them?—It may do some good; the patients want attending to; they want their bowels kept open, or sometimes the bowels are somewhat too open, and want checking; suitable diet may be prescribed for them, and proper cleanliness observed, and proper care given to them. Something can be done for their good, but not very much to check the progress of the disease.

4635. I presume, of course, that those precautions or attentions to patients would have the same effect as with regard to the other diseases?—Just the same.

TO THE EDITOR OF THE DAILY NEWS.

SIR,—The *Lancet* startled its readers a short time since by asserting that it never approved of public vaccination as now practised, and it appears from some remarks in the same journal (Sept. 4) on the recently published report of the medical officer, that the Privy Council inspectors justify this condemnation; for out of 1,749 vaccination districts inspected, the authorised first-class gratuity of 1s. per case has been awarded to 129 only, and the second-class gratuity of 8d. to 219 more. As the districts inspected are about half those in England and Wales, it follows that there are about 3,000 medical men performing operations to which parents are compelled to submit their children, and for which the ratepayers are taxed, but which are wholly disapproved by the highest authorities. Another point worthy of attention is that a distinction is drawn between one vaccination and another. Can anybody explain to the public what constitutes a first or second-class vaccination? I venture to say no such distinction ever entered the head of Jenner.—I am, &c.,

G.

VACCINATION—ITS NATURE AND EFFECTS.

(*By a Poor Law Guardian. Printed and Sold by G. Witt, Kings Lynn.*)

The writer—a parish guardian in the eastern counties, of a union embracing about twenty thousand population, for a period of twenty years—has had some experience in the working of the Poor Law, and has been from many circumstances painfully affected with the working of the medical relief, and especially brought to consider how the law, now so imperative, affected the poor in the act of compulsory vaccination. The more he saw of the working of this act, the more certain was he that vaccination was the seed sown, and fever was the crop raised. One public vaccination doctor was paid to disease the healthy infants, and another doctor was paid to subdue the fever created. The charges of the extras for work done was, in the latter case, some quarters more than the salary for the same time; and in cases of neglect or mistake, such inquiries were nearly always supposed to be of such a nature as only a medical man could answer, and was simply a letter to B respecting the practice of A. B's fee for the investigation is one guinea; if the case requires watching, two guineas. B reports that the practice of A was quite professional. These diseases increasing with the medical precautions and salaries of the doctors, caused repeated and pertinent inquiries, ending in the author being invited to read a paper on vaccination at a con-

versazione, which, on the solicitation of several friends, is given to the public, in the hope of appealing to common sense, that the individuals who do their own thinking may come to a right conclusion. Is vaccination right, supposing it to be a prophylactic?

LADIES AND GENTLEMEN,—I am here by the invitation of your secretary and courtesy of your chairman, to give a paper on the reason why I, a tradesman, a non-professional, should hold ideas on compulsory vaccination contrary to those which the Medical Department of the Privy Council have made by Parliamentary authority *compulsory* on every human being in this United Kingdom, and wherever English authority can effect it. I belong to a large family of Nobodies, who cannot reconcile the logic of committing a felony by inoculating a child with a disease natural to man; while on the other hand you are fined, with the alternative of imprisonment, if you refuse to vaccinate your healthy child with the virus taken from a diseased brute. The object of this legislation is stated to be the prevention of small-pox. It is a rule, though there are exceptions, that once having had small-pox you are safe from a second attack. This observation induced Lady Mary Montague, in 1772, to introduce the Arabian practice of inoculation through a puncture in the skin, with the small-pox virus, into children, to prevent the possibility of small-pox taking later in life. This practice of inoculation was strongly advocated by the medical faculty of that day, and was extensively carried out for many years, till it was found that it spread the disease it was intended to destroy. It is now a penal offence. Vaccination only wants investigation to show also its baneful effects, and that its principal support is from the large pecuniary interests involved in it by the *profession*. This was questioned when I mooted such a reason before. I really think the medical gentlemen would not wish to claim a higher moral tone than the other professions, or even than the nobodies and ignoramuses; it is only fair to suppose us all to have an equal share of selfishness. I observed in A. Herbert's speech on the purchase system, that our army costs £29,000 for punishing, £46,000 for preaching, and £250,000 for doctoring; and the navy also costs £125,000 for the same. Not altogether gratuitous, though some people labour under the idea that compulsory vaccination is. The *Lancet*, of February, 1871, says that a fee of 21s. for persons in well-to-do circumstances, and 10s. 6d. for those in middle life or in schools, and 5s. each for the lower class and servants, is not too much considering the care required. Re-vaccination is also chargeable for adults on the poor-rates. I will add, that as our wealth increases the profession is flooded from the trade ranks, and a 10s. average poll-tax on the population of this country of thirty millions, with a colonial right over untold millions, is a matter which, in a business light, by a business people, is not to be despised. Even Dr. Seaton, one of the lords of the medical department of the Privy Council, in his work (page 369), admits—"A scramble among some of the contracting practitioners not unfrequently took place, each eager for their 1s. 6d. a piece, and each content to let the mother dictate in what manner the vaccination should be performed, so long as he got the money."

Now, the first position is that taken by Dr. Jenner, who stated distinctly, on examination before a Committee of the House of Commons, that his plan of vaccination protected for ever from small-pox. Doctors, at that period, seventy years since, differed, as they do now; and several of the highest position wrote and strove against the practice. Dr. Jenner, by a fluke, won the sanction of the legislature, and obtained for his experiment £30,000. I will read a portion of his life at this period; what his vaccine was, and whence derived. I will also beg your attention to the contrast between that and the present practice, as shown in this work I hold of Dr. Seaton's.

Dr. Jenner's words:—"There is a disease to which the horse is frequently subject—farriers term it the grease. It is an inflammation and swelling of the heel, from which issues matter possessing properties of a peculiar kind, which seems capable of generating disease in the human body which bears such a strong resemblance to the small-pox, that I think is highly probable it may be the source of that disease. In this dairy county (Gloucester) the office of milking is done by men and women indiscrimi-

nately. One of the men having applied dressings to the horse's heel affected with the grease, incautiously milked the cows, and thus the disease was communicated to the cow, and hence the name cow-pox." Dr. Jenner then describes the disease, and says :—"What renders the cow-pox virus so extremely singular is, that the person thus affected is for EVER after protected from the small-pox." One of his strongest arguments was, that his inoculation of cow-pox was not subject to the risk of imparting an infectious disease like consumption, which was the case with small-pox inoculation, but could be performed with perfect ease and security. Our present vaccination is small-pox inoculation—not Jenner's. It is arm to arm—human, not cow-pox at all.

Jenner believed that swine-pox, cow-pox, small-pox, and the grease, were all one and the same disease ; at one time he thought the grease (the original source of the true vaccine), should pass through the cow, modifying it before using it as a prophylactic. Upon further inquiry he arrived at a different conclusion, and used the grease in its natural state, and supplied the public with it from the original source—the horse's heels.

Now, as the cows have not been kind enough to have cow-pox naturally for seventy years, the doctors are by no means at a loss to procure a supply of pure lymph.

The process of poisoning a healthy beast is somewhat difficult—strong health will not unfrequently refuse for a time to be affected by it ; but when it does take it, the animal will supply filth enough for half a million of people.

In order to get this pure matter, it is taken from the sores of a child vaccinated, or from a person suffering from small-pox ; this matter is then introduced under the tail of the brute, and when the cow begins to show marks of blood poisoning, in the shape of foul-looking sores, the discharge of the disease hybridised by man and beast, is again used to blood-poison children. This is called vaccination from the cow direct.

Dr. Seaton, in the preface to his work entitled, "Hand-book on Vaccination," remarks on the difficulty of making it intelligible to the non-professional. At the same page, however, it is strongly recommended for the use of guardians ; and as the work was specially obtained to educate me, I feel no hesitation in referring to it. The first chapter is a eulogy of Jenner's vaccination, and his golden rules of care, viz., to sweep away all eruptions from the skin previous to inserting the vaccine lymph, also to notice each case during the development, inattention to which might be highly dangerous to life, and non-protective against small-pox.

Then follows a description of the cow-pox vaccinia, humanised, equine vaccine (or the horse-pox), natural cow-pox, artificial cow-pox—the comparative values of each; difficulty in keeping, storing, and effectiveness ; spurious small-pox—various opinions, vulgar and ignorant prejudices of the uneducated ; but most remarkable is the decidedly differing opinions of the *faculty*. Cow-pox vaccinia, says one authority, is best fresh. Several instances given, in which its properties were found to have deteriorated in one month ; in six, it was questionable ; at twelve, altogether non-effectual ; whilst the next page would prove it had been kept four years, and like good old port wine, improved. Another page describes cow-pox as being taken with equine vaccine to India, and while the cow-pox vaccine was useless, the equine was found to have all the advantages its advocates could wish. Then the spurious vaccine was also proved to have the same properties, raise the same pock, and produce the same symptoms as the genuine cow-pox ; and a chapter is devoted to cases in proof, and statistics are put in to prove each position ; further on is a long dissertation on the alleged disastrous consequences, in which various cases are thus disposed of ; the fact that it was quite possible mistakes might have been made ; impure lymph might have been used ; lancets might have been improperly cleaned ; due intelligence not have been used ; especial care not have been exercised in vaccinating children when in an unfit state, or with lymph unsuitable to the condition of the child. Yet statistics proved small-pox under all these circumstances to have been diminished, while showing that other diseases have increased. Thus in the first year especially (the year

of compulsory vaccination), mortality has much increased; yet, in spite of its beneficial character, admits vaccination only checks small-pox. Another point strongly urged is this, that large stations for vaccination ought to be carried out, to effectually stamp out small-pox; and every vaccinator ought to know, study, and arrange his patients, that their physical condition might be in accordance with the vaccinia, to which great attention should be given, and a large assortment of lymph required. Now, as a Poor Law guardian, I ask how can this be effected? Money will not purchase the attention. Only last week a mother, Mrs. ——, in Purfleet Street, applied to Mr. W——, public vaccinator, for attention to her child, with an inflamed arm, after six weeks' vaccination. He sends word out by his assistant, his vaccination was done successfully in the eight days, and she must apply to Mr. B——, the parish doctor. This she does, and Mr. B—— says it is a case of vaccination belonging to Mr. W——, and refuses to look at it.

Who among the public vaccinators ever trouble themselves to examine the child, or know if any eruption is on it? I exposed a case which occurred at our Board, of this character. Two doctors were appointed to visit and report; and their written report, at £2 2s. each, was that the carbuncle was there previous to vaccination, and was therefore not the effect of vaccination. Was that child in a fit state to vaccinate? I will not take you from your own neighbourhood. I saw in Austin Street, and can show you a boy of seven years of age, the child of healthy parents. He, born healthy, never had anything the matter with him until he was vaccinated. His mother bared his arm, which looked as if it had been burned—excused his body, which was done up. The agony that poor child endured, the irritation (his arms being obliged to be put in a strait-waistcoat), his mother said no one could imagine. Yet Dr. Seaton, in his work, says only ignorant mothers have complained of vaccination; and four or five cases are thus disposed of as unsupported by any medical authority. Another case at Watlington of exactly the same character. This child is now under a skin doctor in London. This lady's doctors' bills were above £50 up to that time.

Another case of one of my workmen, whose child was well—vaccinated, then ill: its little arm swollen; then a bone rotted, and came away. Doctors advised amputation. It suffered eighteen months: medical certificate of death—scarlet fever. In the latter cases each of the mothers said, Give me nine days of small-pox, in preference to this agony and suspense for months and years, and still objects of commiseration and anxiety.

Dr. H——, a parish doctor, gave me his opinion of the case of a child, a private patient, vaccinated at nine months—died; the second the same; third likewise. The fourth, he advised the mother, as her medical man, not to vaccinate until of riper years: she did so. That child is now a strong man. When I put it to the doctor—Could he, with such facts, continue the practice? "Oh, we doctors must live; and it is law."

He who expects there is any examination or application of Jenner's golden rules to pauper children, or those who go for gratuitous vaccination, is grievously mistaken. Dr. Seaton says that all educated practitioners agree they have never seen any ill-effects of vaccination; yet, in reply to a circular issued by my Lords of the Medical Privy Council to the whole of the medical men (numbering about 30,000) in this country, only about 480 made any response. Where were the other communications? Did the 29,520 throw this minute into the waste-paper basket? or consider their probable future requirements might be jeopardised by an answer according to their knowledge or practice?

Some of the writers in the dailies—the *Standard*, *Daily News*, and *Telegraph*—assert that with three good vaccine marks you may sleep with a person with the small-pox. I have traced in all these writers and wordings a great similarity to a manuscript I have of Dr. Stephens', of the Medical Department of the Privy Council. Government advertisements and patronage come in useful to the fourth estate. But our Lynn public vaccinator and his father-in-law will say there is only a given

suppuration; and whether it be in three, six, or nine, or only one mark, it has the same quantity, and the same prophylactic effect.

Now for a few medical opinions, not belonging to the class Dr. Simons, of the Medical Department of the Privy Council, called "*educated.*"

What harm can it do? is often asked. The dangers may be thus classified—immediate and remote. By the introduction into the system of other diseases; by inducing a change in the skin or surface of the body, which changes its vital action, and so hinders the system from throwing out morbific matters from the blood. The greater liability to death from other diseases than small-pox, in the vaccinated. The transmission from parent to offspring of an enfeebled constitution, the result of vaccination (and if there is one matter more than another which would affect the consideration of this subject, it would be the horridly-scarred countenances from small-pox).

Extract from the *Journal of Public Health*:—"Dr. Caron, Chevalier of the Legion of Honour, says, 'The mortality from small-pox seems to increase with the number of the vaccinations and re-vaccinations performed every day in Paris.'"

On measles, scarlatina, and diphtheria, since compulsory vaccination, there has been an excess of 254,000 in infant mortality in seven years, calculated on the annual deaths to one million. "The ratio of vaccinated cases to the whole administration of small-pox patients, as calculated from a series of sixteen years, ending with 1851, was fifty-three per cent.; '51-2, sixty-six per cent; '54-5-6, seventy-one per cent.; '59-60, seventy-eight per cent.; and to the present time, eighty-one per cent."

Erysipelas.—According to the thirtieth report of the Registrar-General, 1862-67, there died of erysipelas, of all ages, 10,635. Of this number no less than 7,165 were infants under five years of age. Here we have the result of vaccination. Erysipelas was formerly a disease of adult life, now more than two-thirds are children under five years of age, and one-third under twelve months—the year of vaccination. Talk about the slaughter of the innocents!

No one, I believe, is allowed to enter the navy without vaccination. In 1868, the ship *Octavia* had 175 down with small-pox. The Duke of Somerset, in reply to the Earl of Ellenborough, in the House of Lords, said it was quite true; but, he was happy to say, it was of a very mild character. The first lieutenant and many of the crew died under this modified form—what would a severe form have been?

The *Medical Times and Gazette* contains a letter from Dr. Bakewell, M.D. of of Health and Public Vaccinator of Trinidad, who says: "It is a strange but undoubted fact that leprosy is greatly increased in our land; that it attacks the children of respectable parents, who want nothing in the shape of diet, &c., particularly the Europeans. Now, it is worthy of remark, vaccination has of late years been compulsory. The general opinion of medical men here is that it is quite possible that leprosy may be propagated by vaccination."

Mr. William Field, of Oxford Street, President of the Veterinary College, says grease in the horse is always accompanied by diseased lungs. W. C. Collins, Esq., M.D., says 250,000 deaths annually occur from consumption, pneumonia, convulsions, atrophy, and other strumous diseases occasioned or superadded by vaccination. Consumption, scrofula, and other blood diseases were comparatively unknown before the introduction of inoculation and cow-pox vaccination. "It is our duty," said the report of the first Vaccine Institution, "to acknowledge that four or five cases have proved fatal from the effects of vaccination."

The lamented death of Sir Culling Eardley, in 1863, was due to re-vaccination. Several of our soldiers in Shorncliffe Camp were fatally affected by re-vaccination, "one poor fellow escaping death by the amputation of his arm, which was done at his earnest entreaty." (See the *Lancet* of July 7, 1860, in a letter from a military surgeon.)

Dr. Baynard, a French physician of eminence, in a petition which he sent to the British House of Commons, by Mr. Ayrton, of the Tower Hamlets, said: "Since vaccination the mortality of the young has doubled; and, contemporaneously with this increase of mortality, we have a diminution of births, an increase of the general death rates, and the number of second marriages."

Dr. Copland, in his "Medical Dictionary," p. 829, says: "Just half a century has elapsed since the discovery and introduction of vaccination, and after a quarter of a century of transcendental laudation of the measure from well-paid vaccination boards, raised with a view of overbearing the increasing murmurings of disbelief in all those who observe and think for themselves, the middle of the nineteenth century finds the majority of the profession, in all latitudes, doubtful of its advantages, either from inoculation or vaccination."

Large numbers remain yet unvaccinated in Ireland, owing to the dread of the poor, who ascribe various skin diseases to its infliction, and also to the small penalties (generally one penny) levied by the Irish magistracy.

If, as is often asserted, small-pox is stamped out in that country, how do you account for the 962 vaccinated cases in the Dublin Small-pox Hospital, out of 1,285?

It is worthy of consideration how anxious are the medical authority that their stamp should be on every arm, wherever Government have the power. Thus the post-office letter-carriers, assistants, from the lowest to the highest—in all the civil, military—every position—must be vaccinated; and, to crown all, the English clergymen in Paris lately required the vaccination test before administering the holy rite of matrimony. Surely if it were right such preferments would be sufficient, without this Compulsory Act, after seventy years! Panic is the direct feeder of the present laws. House-to-house vaccination puts all persons in dread, and the vast fee-field which is thereby created corrupts the senses of the medical profession.

If I can show that life has not been saved; that life has not been lengthened; that diseases have increased; that sanitary measures claim some position; that cleanliness, pure air, water, drainage, general knowledge, and scientific laws have all been known blessings to humanity, why not a diminution of the death-rate and a healthier life? Why not vaccinate for fever prevention? Of what advantage is it that vaccination is to be introduced at the expense of the poor rates and Government taxes, if through it some other disease more deadly takes its place?

The Royal Hall, St. Helen's, Jersey, has resolved to have no compulsory vaccination law, and Jersey has remained wholly free from small-pox, and is likely to remain so. You who are not satisfied with your prophylactic, can take your summer tour here safely, while vaccinated and re-vaccinated places are doubtful. A prophylactic means going out into the rain without getting wet; and absurdly prophylactic indeed, to fail in eighty-four cases out of one hundred, for only sixteen small-pox patients out of one hundred were unvaccinated. Vaccinating means panicing, and Dr. Garth Wilkinson says "a good small-pox panic is worth two millions of pounds to the profession."

Finally, I can understand the policy of patenting an invention, but I utterly repudiate the patent authority of any government to make me use that invention. If medicine was on a right base, it would require no state aid to make it compulsory, nor any departure from the good principle of the jury law—NO INTERESTED PERSONS IMPANNELLED.

THE NUT CRACKED.

To the Editor of the DERBY MERCURY.

SIR,—I have just read your article, headed "A Nut for Anti-Vaccinators to Crack." As I am an anti-vaccinator, though I do not belong to the Anti-Vaccination League, nor to the Society for the Suppression of Compulsory Vaccination, and am free to confess that there are some disreputable characters connected with this movement, which is nevertheless a movement on behalf of purity, I trust you will kindly allow me to crack your nut, and to beg your readers to taste the kernel. I think that impure milk, drawn from diseased cows, and given to little children, is quite sufficient to account for the disorders described in your paper. But what should we say of a law requiring all children, under repeated fines and imprisonments, to drink diseased and disease-producing milk? Nay, to make the analogy perfect, what would

be thought of a enactment compelling parents to submit their healthy children to a surgical operation, and to the enforced insertion of such milk *directly* into their blood? thus violating one of the simplest laws of physiology, according to which nothing *immediately* enters the blood. Now, to look at vaccination in the light reflected upon it by this parallel; what must be thought, if men only think calmly and from an honest desire to see the truth, of the practice of lancing the arm of a healthy babe, and of poisoning its blood with the rejected product of a sore? There is too abundant evidence that it does not prevent small-pox, which of course could only be prevented by the removal of its producing cause, always to be found in impurity of one kind or another. There is, further, too much evidence that it transmits every description of constitutional disease. I think, sir, it must in fairness be admitted that as diseased milk produces disease in children who drink it, so rotten and diseased tissue, forced into the blood through the wounded arms of little children, many of whom in their infancy never get any but their mother's milk, must of necessity be productive of disease and injury, and never of anything of a contrary character. I may here state—I am ready to state it on oath before any tribunal—that I myself have long known a doctor who, instead of vaccine, uses *glycerine* and *cantharides* (Spanish flies) in his "vaccinations." I have long heard of this practice, but I have only recently been able to authenticate it. Now, surely this deceitful and deceptive practice, which I should be glad to affirm in the most solemn manner has the sanction of legally qualified medical authority, is the most decisive condemnation that could be found of the useless and dangerous character of vaccination.

I have the honour to be, your obedient servant,

WM. HUME-ROTHERSY.

3, Richmond Terrace, Middleton, Manchester, May 30, 1872.

PECULIAR PEOPLE v. DOCTORS.

(*To the Editor of the* EXAMINER *and* TIMES.)

SIR,—May I be allowed a few lines in your columns for the explanation of two points of the case of Hurry, reported so fully in yours of to-day? First: Is it a crime to refuse medical aid? Second: Medical aid being obtained, is it of any value? As to the first, Justice Byles, in his summing up, said he "should assume it was an indictment known to the law" to refuse medical aid. Is it necessary to point out that, strictly speaking, this was the only point to settle. To prove that the man Hurry did not get a doctor, is not to prove that he was bound by law to get one. And until a law exists which compels men to call in medical aid, it is not surely legal to say they have "broken the law." Secondly: Medical aid being obtained, is it of any value? Here I am, at least, on ground which will stand elucidation, not from my or any other "layman's" opinion, but which we can answer in the clearest possible manner from the evidence of the "heads of the profession." Sir William Gull said in evidence before the Select Committee last year that in respect of small-pox or vaccination there was "no greater authority that he knew of than Mr. Marson." So to Mr. Marson we will go, and be it remembered we are asking of the greatest medical authority what he considers the value of this medical aid which Justice Byles "assumes" it unlawful to refuse to call in. *Vaccination Blue Book*, 1871: Mr. Marson said (Q. 4628), "We have no power of controlling the febrile eruptive diseases." (4629.) "Is that your opinion?" by Mr. Jacob Bright. Answer, "It is the opinion held by the best informed in the profession generally I believe, so far as small-pox, measles, and scarlet fever are concerned. It might be limited to those diseases and a few other febrile ones." (4630.) The College of Physicians have no knowledge of the subject "as regards stopping the progress of the disease." (4632.) "After having attended upwards of 13,000 cases of small-pox, is it the case that your experience has not enabled you to give the profession any information with regard to that disease which is likely to serve them?" "Not much, I am sorry to say, in the medicinal treatment, because we cannot control these three diseases." (4634.) "The patients want attending to; suitable diet may be prescribed for them and proper cleanliness

observed, and proper care given to them. Something may be done for their good, but not very much to check the progress of the disease." I wish the jury in Hurry's case could have had the Blue Book in their hands to have read the evidence of this the "greatest authority" before they gave their verdict. I think I have cited enough to show your readers that Hurry had "the best of it," to use your own editorial words, and to show that this supposed crime was the refusing of that part of the only things which could be done for the patient, which was of no avail; while the evidence so fully reported by you amply shows that the other part, viz., the care, cleanliness, and diet were well regulated. In old times St. Peter's fee accompanied the poor unfortunate to the celestial gate, in order to gain him an admittance. Now, the medical bolus is the proper, regular, and legal, accompaniment to the shades and would seem as necessary for his journey.—I am, yours truly, ALEX. WHEELER.

Northgate, Darlington, May 10.

HYDROPHOBIA.

On issuing the seventh edition of "Practical Hydropathy," I think it will not be out of place to make a few remarks upon the disease called Hydrophobia, about which we frequently hear so many horrible, but at the same time ridiculous stories, such as the patient going into convulsions at the sight or even the very name of water, barking like a dog, showing fierceness, and attempting to bite any person who may be near him, foaming at the mouth,* &c. &c.; but which disease is only a form of the well-known one called tetanus.

In the first place, the name given to the disease, "Hydrophobia," or *fear of water*, is erroneous; for the convulsions brought on by attempting to swallow water or fluids would equally follow the attempt to swallow a piece of beef-steak. It might, therefore be called, with equal justice, dread of beef-steak. In proof of this, I will quote a passage from the account of the last case of so-called Hydrophobia at Liverpool, described in the *British Medical Journal* of June 11th, 1864, page 633:—

"10 P.M. The pulse was 120, more feeble. He had suffered much from the paroxysms, which had been more frequent, but less violent. He had slight muttering delirium, but when roused was quite rational. He sat for some time on a slipper bath half-filled with water, the *sight* of which in this vessel did not disturb him; so that it would appear as if the dread of and spasms excited at the sight of fluids were associated with the desire and attempt to *swallow* them."

Now compare the above with the description of tetanus in *Hooper's Medical Dictionary*, page 1,283, and it will be seen how singularly the two cases correspond. Here it is:—

"Attacks of tetanus are seldom attended with fever, but always with violent pains; and the spasms do not continue for a constancy, but the muscles admit of some remission in their contraction, which is frequently renewed, especially if the patient makes the least attempt to speak, drink, or alter his position. The mind generally remains undisturbed to the last."

The same medical authority also says, "Tetanic affections are occasioned either by exposure to cold or by some irritation of the nerves, in consequence of local injury, by puncture, incision, or laceration;" so that a wound caused by the bite of a dog might bring on tetanus, especially if the injured parts were excised, and caustic applied to the raw surface. I do not know anything more likely to bring on tetanus than the application of caustic to a raw wound, and have myself seen the fatal consequences of its use.

About five years ago, Mr. Witham, farmer, of Winster, near Matlock, trapped his thumb with the horse-chain, when ploughing. He took very little notice of the wound at the moment, merely applying some trifling remedy; but after a time the arm began to swell, and he went to a doctor, who cut deeply into the thumb, and then applied caustic frequently and severely. Tetanic symptoms appeared, and I was

* The ejection of saliva from the mouth of the patient occurs simply from inability to swallow.

sent for. By means of fomentations, packing, and other soothing appliances, we subdued these symptoms; but it was too late. The patient died from nervous exhaustion; and the surgeon with whom I usually consult unhesitatingly pronounced his opinion that the attack of tetanus, and consequently the man's death, had been entirely owing to the free use of caustic. Had he seen me before the caustic was applied, I have no doubt he could easily have been cured.

I earnestly caution any person bitten by a dog not to allow a doctor to cut out the part bitten or to apply caustic, but to foment it well with hot water, and afterwards proceed according to directions on page 148, for treatment of wounds, &c.

The medical writer I have quoted above (Hooper), speaking of the symptoms of Hydrophobia, says they have been observed "to follow the course of the nerves, rather than that of the absorbents. The freedom of the lymphatic glands from disease, indeed, has often been noticed, and adduced as an argument that the disorder does not depend on the absorption of any virus."

If the disorder does not depend on the absorption of any virus, which I think is a fact quite clear to an unprejudiced mind, then, of course, it cannot be communicated by the bite of a mad dog (though tetanus arising from a lacerated wound may be so caused); and in this case how barbarous and absurd must be the use of the lancet and caustic, adopted by medical practitioners who believe in the imaginary disease!

But if any one has unfortunately submitted to this treatment, and should tetanic symptoms ensue, I recommend the remedies described, which should be persisted in until relief is found.

JOHN SMEDLEY.

Hydropathic Establishment, Matlock Bank,
August, 1864.

HYDROPHOBIA.—DR. BUISSON'S CURE.

The following is translated from a French work, written by C. Lambert, "On the Treatment of Canine Madness by Russian Baths" (page 240):—

"Notwithstanding that in 1679 the celebrated Sauche, in his note addressed to the Academy of Medicine of Paris, said most positively, 'I recommend the employment of Russian baths as a remedy for hydrophobia,' it is probable that their efficacy against this dreadful distemper would never have been surmised, if Dr. Buisson had not cited several instances of cure of canine madness by their application, which he did in a brief article presented to the Academy of Sciences, in 1844.

"'Hydrophobia,' says Dr. Buisson, 'is indigenous to certain animals, such as the dog, wolf, cat, &c.; in a word, in those animals which do not perspire. Animals that perspire, such as man, the horse, &c., are never subject to this disease, except by the absorption of the rabid virus.'

"'Having been summoned to attend a woman labouring under hydrophobia,' says Dr. Buisson, 'after bleeding her, I wiped my hands upon her handkerchief, which was saturated with saliva. Having a wound on the first finger of the left hand, on the ninth day I felt a pain proceed from it by the radical which communicated with the brain. The attacks continued about three minutes, with intervals of seven or eight. The eyes were extremely painful, and appeared to be starting from their orbits. Light affected me acutely, and, as a consequence, all luminous bodies, such as glass, metals, &c.; my hair became so sensitive that it appeared that I could count them without seeing them. The effect of a current of air was not only painful, but prolonged the attacks. My body appeared to be lighter than air. I fancied that by leaping from the earth I should rise to a prodigious height, and that by throwing myself from a window I should not touch the ground. The glottis was painful, and a slight inflammation also existed in the epiglottis. I secreted much saliva, and continually expectorated. I perceived that the glands were choked up, and wishing to

assure myself of it, I was unable so to do; to such an extent was my sight affected that I finally gave up the attempt. I experienced an incessant desire to run, and even to bite, and felt myself relieved when walking up and down my chamber, biting my handkerchief. I drank with difficulty; the horror which I had of water appeared to be owing to its lucidity, for I could drink with my eyes shut.

"Thinking of nothing but death, I sought the most speedy and least painful. I had long believed that a vapour bath would prevent hydrophobia but not cure it. Resolved as I was to die in a vapour bath, I took Réaumur's thermometer in my hand, fearing that I should be refused the heat which I desired, 42 degrees (127 Fahrenheit). I was cured. I did not expect it. I did not believe in a cure; my preconceived opinions were against it. I merely expected to experience a long intermission from the attacks by being shielded from the air. Nevertheless, I went out, dined, and drank copiously, returned to bed, and slept well. From that moment I have never had a single sensation of the disease.

THE HUMAN BODY: ITS STRUCTURE AND FUNCTIONS.

THE limited space I shall take in this book will not allow me to quote the standard works on physiology to the extent I wish. I shall, however, endeavour to give ordinary inquirers a pretty general idea of the subject of which I treat, and add a list of works for those who wish to enter more minutely into the study of these matters.

Having no professional character at stake, as I have not "qualified" at Surgeons' or Apothecaries' Hall, I can make use of terms that otherwise would expose me to ridicule. There is in this an advantage to my readers, unlearned in the scientific language of the medical schools, as it enables me to speak in terms they will understand.

We read in the Bible, that man's body was made out of the dust of the ground, and we find in this earthy compound from six to seven-tenths of gas and water, the remainder silica or flint and salts; so that in the course of a few years after the death of the body, there is nothing left but a small quantity of dust. "Then shall the dust return to the earth as it was; and the spirit shall return unto God who gave it." The gas and water having risen into the atmosphere come down in rain and moisture, and being absorbed by vegetation again enter into the composition of human bodies, through the vegetable products of the earth. The very bodies we now occupy may, and most certainly do, contain some portion of the very materials that have formerly constituted other human bodies, as nothing here can be annihilated until the final destruction of all things in and on the earth.

The spirit or immortal life, however, was, we read, breathed into man's nostrils by the Almighty Creator, "*and man became a living soul,*" to live in, and out of the body for ever. We have here commenced an existence which is but the dim shadowing of the glorious state that is to follow, when this earthly tenement of the spirit is changed for one "incorruptible, undefiled, and that fadeth not away." This soul, or spirit, which dwells in and actuates our earthly frame, performs its movements by the nervous system, which may be aptly termed an electric telegraph apparatus.

The nerves of the special senses, viz., touch, taste, smell, vision, and hearing; the nerves of swallowing and breathing; with the nerves of motion and sensation, are the three highest orders of the nerves, and are called the spinal-cerebral. The fourth order consists of the nerves of the organic or nutritive system.

In the spinal marrow the nerves of motion and sensation take their rise, and run together to every part of the frame where motion and sensation exist. A motive nerve will not act, unless accompanied by a nerve of sensation, which performs the office of stimulating that nerve, or conveying its message for action. A continuation of the spinal marrow, just within the skull, is called the *medulla oblongata*, from which, and a little farther in the base of the brain, the nerves of the special senses of sight, smell, taste, swallowing, breathing, and hearing, have their origin; these

nerves, or telegraph wires, proceed to the organs to which they are made to give action. All the nerves of motion, sensation, and special sense are connected with, and ramify into the *cerebrum*, or upper part of the skull; this is the supposed battery where the nervous energy, or electricity, is concentrated for the mind to apply or use as it is wanted: just in the same manner as the battery is kept charged for use at the electric telegraph station.

The *cerebellum* at the back of the skull is considered to be more especially the battery for some of the nerves of special sense. These three orders of nerves of motion, sensation, and special sense are called the true spinal *cerebral* system. They are of the highest order, and their office is entirely confined to the operation of the mind over the body, except in involuntary acts. Just as these nerves, or telegraph wires, are kept in a healthy state depends the power of the soul to give expression to its will. Precisely as the cerebral nerves of an infant on its entry into the world are developed, so is the power of the soul within to give expression to the will. If, on the contrary, the cerebral nerves be defective, the infant grows up with what is called a weak intellect, or idiotic. But those terms are erroneous, as concerning the power of the spirit; it is not the immaterial spirit that is deficient, but simply the material of the telegraphic battery or its wires. The soul can never know any growth or diminution, naturally speaking, in its powers; it becomes conscious of new scenes and new ideas; but the powers to receive those ideas are only limited in this state of existence by the perfectness, or otherwise, of the nerves, the medium of communication with external objects. The soul is a divine emanation, and possesses similar powers, only in a much lower degree, to those of its Divine Creator. The deep significance of the expressions of the Bible—"And God said, Let us make man in our image,"—"So God created man in his *own* image,"—"And breathed into his nostrils the breath of life," are little thought of or rightly appreciated. With this breath God has deputed wonderful powers to his creatures. How wonderfully man is endowed with the power of putting motion into inanimate matter—into steam-engines, for instance, and the great variety of machinery! Then how extensive and illimitable is the range of man's mind, and how far it can soar out of its body, beyond the limits of this globe on which we dwell! It can pursue its course into regions which have not yet been seen, but which it is often compassing in the spirit of thought. When the cerebral nerves have come to maturity in the full-grown person, then we see the soul acting with the full powers which this state of existence permits. The sole difference we see in the mental powers of individuals is owing to the difference and unequal development in the cerebral nerves alone. Thus we find persons, and even families, having a fine development of the head generally possessing great superiority in mental powers. On the contrary, we shall find those individuals with the low, small retreating forehead to be as much deficient in their mental powers; nor will any amount of labour bestowed upon their mental culture ever succeed in extending or enlarging those powers in any great degree. Again, we shall see some individuals with a large development of the upper part of the forehead and skull, who are by no means clever, yea, sometimes sadly deficient in intellect. These exceptions proceed from some defect in the nervous centres of the base of the brain, which, from the preponderating power given by the large development to the battery of that telegraph of the human frame, causes such individuals to act on impulse without judgment. On the other hand, we shall find others with the small, narrow, low forehead, often evincing great acuteness in business, and sometimes not wanting even good ideas. Here the centres in the base of the brain are well developed; but, for want of a proportionate battery in the cerebrum of such persons to give healthy, sound impulse, they are generally slow to act, and deficient in energy to put their designs into execution.

As old age comes on, the cerebral nerves, with all the organs, begin to lose their power; and we see the soul, which acted with so much power when the frame was in full vigour, again return to the feeble mental efforts of childhood, simply from decay of the matter of the nerves. I shall notice in connection with the next and fourth division of nerves, the injury done to children by too early education, and the overwork of the brain by studious or over-anxious men of business.

I wish, however, not to be misunderstood in these statements with respect to the powers of the soul as being limited by the perfect or imperfect structure of the nervous system in the brain. The Almighty and Beneficent Creator evidently has not made man's happiness, in this or a future state, to depend on the conformation of brain inherited from his progenitors. Such an idea of the Great Creator's omnipotence would ill accord with the Christian's idea of his infinite goodness. That the power to acquire knowledge, and to act with vigour, sound judgment, and great foresight, is alone possessed by those who have a harmonious and fully developed brain, is past all controversial doubt; and so is also the fact, that the highest degrees of temporal and spiritual happiness are by no means unfrequently found to be possessed by those who have little capabilities for great acquirements in the knowledge of this world. God, we often see, takes the weak things of the world to confound the wisdom of the wise, simply because many persons by the world considered weak, and of little account as to knowledge, have applied for and received the teaching of the Holy Spirit, making them wise unto salvation, and giving them the peace which passeth all understanding. And although they are conscious they do not possess high powers of making great progress of investigation in secular learning and scientific pursuits, yet they are perfectly content and happy, knowing that God appoints some, by the gift of great talents, to fill certain positions in life, while he makes others conscious that their want of these high intellectual powers is no detriment to their happiness; and that soon all who have greater or less talents must give an account of the use made of those talents to a Master who will reward His faithful servants, though ungifted and humble, with a crown of life which shall never fade away. And so our Almighty Creator shows to His creatures that, in all His dispensations, their consummate happiness is His design and intention. For to all "the Spirit and the bride say, Come. And let him that heareth say, Come. And let him that is athirst come. And whosoever will, let him take the water of life freely," that when their task on earth is accomplished, they may realise the apostle Paul's beautiful exposition of the nature of the body and spirit—"So also is the resurrection of the dead. It is sown in corruption; it is raised in incorruption: it is sown in dishonour; it is raised in glory: it is sown in weakness; it is raised in power: it is sown a natural body; it is raised a spiritual body. There is a natural body, and there is a spiritual body. As is the earthy, such are they also that are earthy; and as is the heavenly, such are they also that are heavenly. And as we have borne the image of the earthy, we shall also bear the image of the heavenly."

Next, as to the structure of the spinal cerebral nerves. It will be seen by Sir Charles Bell's work on the Nervous System, and likewise by Kirke and White, Marshall Hall, and others, that these telegraph wires are tubes, supposed to be filled with a fluid. When this fluid or its delicate tube or outer sheathing becomes vitiated or injured by vicious living, improper diet, private excesses, but most of all by the use of intoxicating drink, tobacco, opium, &c., the mind desiring to act, in attempting to send its messages by those damaged nerves or telegraph wires, finds no response. A person with sound healthy nerves determines on an action and performs it with ease and decision, and afterwards the nerves remain at rest until again prompted to action by the force of the will, but not so with the poor nervous hypochondriac: the wires repeat again and again the same impressions first made on the nervous centres in the brain, the soul has lost control over the frame, the soul in fact has got a trembling disordered harpsichord, unstrung, and out of tune, and is sometimes so harassed and distressed with unavailing efforts to make it answer to the efforts of the will, that, in despair, it sometimes dashes the whole frame to pieces by a violent death. Without a good knowledge of the nervous system, its structure, functions, and action, no person is justified in undertaking the cure of disease; and it is of the utmost importance to every person to understand, at least, the outlines of his own system, to be enabled to make the utmost use of his intellectual powers, and to enjoy existence with the high privileges and endowments God has given to man, by bringing the body in subjection to the soul, and thus fulfilling the high purpose of his creation, in glorifying the Gracious and Almighty Author of his being. The nerves proceed

from their centres in the spinal marrow and the brain, in bundles, enclosed in sheaths; and they strike out of the sheaths to their different destinations, as they come near parts to which they are designed to give life and action. Their numbers are incalculable; as every peripheral point of the frame has its direct and separate set leading to the nervous centres in the brain. They are larger at their origin, and become so fine as they enter the ultimate tissues of the body, that their termination cannot be discovered even with a microscope. There is a beautiful transparent film called the arachnoid membrane, which encloses the spinal marrow, and is continuous over the whole mass of brain; it also lines the sheaths which enclose the nerves, so that the brain, spinal marrow, and nerves are enclosed in one continuous network, in the same manner as the mucous membrane lines the mouth, stomach, &c. This membrane is wonderfully fine, and is moistened with serum, and therefore called one of the serous membranes of the body, in contradistinction to the mucous membranes lining the mouth, stomach, &c. When the blood is too poor by being vitiated with stimulating drinks, the use of tobacco, severe cold, want of good food, or other causes, the serous membrane is short of this lubricating moisture, or serum, and, consequently, the nerves move in dry sheaths. This soon tells upon the limbs in motion, and is one of the principal causes of rheumatic pains. The more exercise a rheumatic subject takes, the more pain he suffers. I know cases in which persons, having been advised to walk their rheumatism off, have brought on such chronic inflammation in these sheaths, and in the sheaths of the muscles, as to utterly destroy their vitality, and render them hopelessly crippled. Entire rest, proper diet, with our natural means of restoring the nutritive powers to action, are the remedies we use in restoration. Blistering and heating lotion applications, by weakening the parts, invariably injure instead of benefiting. Any mode of living which prevents the blood affording a due supply of serum to these sheaths, affects the brain and spinal marrow, as well as the nerves, and is often a cause of loss of power in the brain and spine, and induces paralysis. Irreparable injury is done to both the brain and spinal marrow by this principle not being recognised in the barbarous treatment of spinal complaints by issues, cupping, scarifying, powerful ointments, and lotions, which never did nor ever can do anything but ultimate injury.

It is easy to discover when the brain is affected, by a sense of fulness in the head or other uncomfortable symptoms. And immediately it is pronounced congestion of the brain; leeches, blisters, and aperient medicines are prescribed; further weakening and irritating the already distressed nerves; frequently to the ruin of the poor patient.

The idea, that when the head is suffering from a sense of fulness, or irritability, it is only necessary to take some of the fluid out by bleeding, cupping, or blistering, is a mischievous, ignorant, and often fatal error, and often lays the foundation of suffering and incapacity for the rest of life. The originating cause of cerebral irritation will, in almost every instance, be found in the stomach, or some other internal part of the body. I have had severe cases of congestion of the brain, with almost entire unconsciousness; and cases of ordinary determination of blood to the head; and even of apoplexy, with loss of memory, which have been restored simply by derivative treatment of fomentation, sitting baths, mustard foot baths, wet sheet envelope, &c. It is to be hoped that the injurious and unnatural system of bleeding, blistering, and purgative practices will be entirely abandoned for these more rational modes of cure derived from natural principles. In the hundreds of cases, comprising every disease and ailment to which the body is liable, that have come under our care (most of which had been given up as desperate before coming to my establishment, or free hospitals), we have never had recourse to bleeding, blisters, or purgatives. The principle we act upon in the treatment of disease, is to endeavour to get the nutritive powers into healthy action by natural means, and thereby replace inert, morbid, diseased, or inflammatory matter in the system by healthy substance, which alone can throw off disease. As it is manifestly impossible to purify vitiated tissue, it must be thrown off and replaced by new, before the body can be at rest.

From this slight sketch of the cerebral spinal nerves, it will be seen what a wonderfully constructed system we possess; and when it is noticed that every

voluntary act must first originate in the brain, and that the message has to travel over a considerable extent of the telegraph wire, or nerve, before the act is performed (for the act appears simultaneous with the will,) the speed at which the message must travel passes all calculation. One more observation on these motion nerves before I proceed to the fourth order of organic or nerves of nutrition. From want of a due appreciation of the action and nature of these nerves, and their arachnoid coverings or sheaths, great and irreparable injuries are often done to the frame by practitioners of allopathy, and by the merely *cold* water doctors. From the previous observations it will be seen how delicate and sensitive the cerebral spinal nerves are; and no severe shocks can be given to them without risk of permanent injury, or death itself. I am aware, in condemning plunge baths or sea bathing, I am running counter to popular opinion; but faithfulness in the cause of truth is a greater consideration with me than having my statements ridiculed. No one ever uses a plunge bath, or the sea bath, without risk; ninety-nine may escape injury, but the next may be ruined for life. The sudden shock to the nerves, and also driving the blood from the surface of the body on the internal vessels, where there may not be power to bear the shock, or return the blood, if not the cause of immediate injuries, lays the foundation of disease which is often developed a considerable time after. I named this to a London surgeon, who favoured me with a visit to inspect my establishment. He corroborated my opinion at once, and said at that time he had an eminent solicitor under his care, who, in going last autumn to the seaside for rest, plunged into the sea as usual with visitors; which caused congestion of the brain, and a severe and dangerous illness, from which he is now a good deal recovered; but the effect will be felt for the remainder of life. In the case also of a lady I have had in my establishment, who went well, and in health, into the sea, the shock produced congestion in the lungs and chest. For this, leeches and blisters were applied by her doctor, which, of course, still further lowered the vital powers of reaction, and the result was chronic asthma, of a most distressing kind, from which the lady is now a complete invalid, and a great sufferer, without hope of cure. In the case of another lady, who, in hot weather, went into a cold plunge bath, during a visit to a friend, internal congestion was the result; and an abscess formed which destroyed her.

Errors are also of frequent occurrence by the reflex action of the nerves not being understood. A lady has recently been at my establishment, who went under a celebrated professor of physic in Edinburgh, for pain in the lower part of the spine; this, he told her, was merely rheumatism, and would soon be cured; he ordered rather severe application to the part, and in a fortnight the lady was lying prostrate in her bed. The cause of the pain was irregularity in an internal part, which is supplied with nerves from that part of the spinal marrow. The severe applications to the poor suffering nerves of the spine only aggravated the internal disorder. She was greatly restored by a long course of mild hydropathic treatment, but I fear will sometimes during life feel the effects of the barbarous "professional" treatment of the learned professor. I have had not a few cases of what have been termed spinal diseases in females, and for which blisters and setons have been applied to the spine, to the invariable injury of the patient, the cause of which I have always found to be internal irregularity. In some cases, the use of the legs has been almost lost, as if by paralysis but has been, to a great extent, restored by our natural means of cure. I could give many cases of the same nature, for they are, I regret to say, of frequent occurrence in our experience. The injury done, especially to females, by bleeding, blistering, injections, caustic, and the use of certain instruments, ruins many a good constitution, and renders the patient an invalid for life.

Sir Charles Bell and Dr. Marshall Hall, in their celebrated works, and other writers upon the subject, show that pains in one part of the body may have their origin in remote parts: diseased parts communicating pain by the sympathetic nervous telegraph wires to different parts of the frame. Nothing but a restoration of the nutritive powers can succeed in giving relief in such cases.

Adhesion of the arachnoid membrane to the substance it covers in the brain, spinal marrow, and nerves, is a consequence of inflammatory action, and is often a mysterious

cause of suffering, which it is impossible correctly to ascertain during life, through the reflex action of the nervous system causing extraordinary pains in the parts of the body remote from the point of disease. The late Dr. Logan, of Leeds, suffered excruciating pains many years, especially in the legs, which he had laid on cushions before him, covered with basket-work, lest anything should accidentally brush over them; so acute was the sensibility. Examination after death showed thickening and adhesion of the arachnoid membrane covering the spinal marrow.

It is one thing to have a scientific knowledge of the frame, and quite another to have a good knowledge how to cure disease. No one can safely be trusted with a ship who has not a scientific knowledge of the laws of navigation. However creditably a man may have passed his examination for a commander, it by no means follows he is able to navigate a ship unless he has had a practical education on board, both in sunshine and in storm. And so it is with the medical profession. A good curative knowledge can only be obtained by practice, after an educational course. This is very strikingly the case with many of the first and most scientific writers and lecturers on the human frame. Their time has been spent in the study of the frame, in all its wondrous complexity; and they have had little opportunities for personal experience in comparison with those who are engaged in practice alone; and, consequently, are sadly at fault when they prescribe remedies which, from their knowledge of the functions and structure of the body, *ought* to succeed, but, nevertheless, are of no avail, and often only aggravate disease.

ADVICE TO MINISTERS OF THE GOSPEL AND ALL PUBLIC SPEAKERS.—Dr. Jonah Horner, in his excellent work on "Health: what Preserves, what Destroys, and what Restores it" (Ward and Co., Paternoster Row, price 1s. 6d.), in which there is also much important information in a popular form, says, "I know that many ministers of the glorious Gospel, who preach on week-nights as well as on the sabbath, make a great mistake in taking suppers after their labour in the pulpit. I know well that they are frequently urged to it by the kindness of friends with whom they have their temporary abode. Frequently, also, they have walked some miles to their work; and a sense of fatigue after sermon, with, perhaps, a somewhat urgent appetite, plead strongly, but wrongly for supper. Let such remember that *sleep* is the only legitimate restorer of nervous energy: and that food is for the supply of the waste of the tissues. Again, a demand is always made on the nerves for the digestion of food. You see, then, that at bed-time, when the brain and nerves are in the most exhausted state, it must be improper to take food for that purpose which is best and most naturally answered by sleep."

This will be found quite true in practice, although it is so opposite to popular opinion. Abstaining from animal food altogether, when pressed with mental exercise, will be found of great service. The idea that strength cannot be kept up without the use of animal food, is shown to be fallacious by some of the first authorities on such subjects. The strongest, healthiest, and longest lived people in the world do not use animal food at all.

SCURF OR ERUPTION ON HEAD.—For Adults. (See Mrs. Smedley's Manual for Children) On rising, well wash head with very hot water, and then tepid, and then put on spongio cap for awhile. Once in a day use steam pads, very hot, for twenty minutes, removing them every five minutes, and then put on 215½ out of vinegar and tepid water for awhile. Repeat this, if possible, during the day; and at night put on a silk webbing cap, well larded with lard without salt, and the oil-silk over.

GUNSHOT ACCIDENT TO HAND.—Well cleanse the wound with warm soapsuds immersion, then use meal immersion, about 80 deg. water, and plenty of fine oatmeal, and keep it in as much of the day as possible, but when obliged to be out, dress it with a pad of soft crisis calico on the wound, then damp wash-leather and woollen glove over all, and take several elbow baths, viz., hold the elbow in cold water for three or four minutes at a time.

IN 1853 I PURCHASED A SMALL HOUSE TO ACCOMMODATE SIX OR EIGHT PATIENTS. I PUT A LITTLE SHED OVER FRONT DOOR AND NEXT THE VERANDAH, AS ABOVE.

DINNER PARTIES; *or the way in which persons prepare themselves for the doctors.*—When society is more fully alive to the wisdom of only eating and drinking to enable the body to go through the duties of life, without regard to pleasing the palate, life will then be greatly lengthened, and disease and suffering immensely decreased. Thousands now are in a constant state of nervous dyspepsia, and their lives rendered anything but happy, simply by their living more to please their taste than to sustain the body. I shall never forget joining a dinner party, which I will adduce as an ordinary illustration of the way in which thousands, who have the means for destroying their health and comfort, are indulging themselves daily, or several times a week. The party was at a gentleman's house in a distant part of the country, and will not, I know, be recognised by any readers of this work, except, perhaps, by the gentleman himself, should he read this book. It was on a cold winter's evening, about ten years ago, snow on the ground, and a severe frost; provisions dear, work scarce, and a time of unusual suffering among the poor. After we had assembled in the drawing-room, before dinner, the conversation turned on the topics of the day, and amongst other matters, on the great distress among the people around. The gentleman said that he had that afternoon visited the house of an old man, which I knew to be within one hundred yards of his own door. He saw a pot on the fire, with something boiling in it. He knew the old man, who lived alone, was very destitute, and he asked him what he had in the pot. He replied he should not tell him. The gentleman went to the fire, lifted up the cover, and saw the pot filled with turnip tops, or leaves, which the old man was cooking for his only meal that day. This, of course, was heard with some expresssion of sympathy by the assembled party, especially by the ladies. It was, however, too disagreeable for us to dwell upon, and so after a little chat on more agreeable subjects, the servant announced the welcome summons to

dinner; and away we went in procession to the dining-room, each gentleman taking a lady on his arm, forgetting all about the turnip tops, and such disagreeable matters, as we entered a large and well-lighted dining-room, displaying a well-furnished table, with a tureen of soup at one end, and a very fine codfish under cover at the other, and further adorned with various sparkling decanters, and long-necked bottles of wine. I well recollect the sight which greeted us. After we were all seated, and the short grace pronounced, we fell to in good earnest, for we had a good deal of work before us, and even winter evenings come to an end. Some chose the rich white soup, made principally of cream, stewed veal, and fowl, almonds, vermicelli, onions, sweet herbs, &c. Some chose codfish and oyster-sauce; and with this course one or two glasses of wine were dispatched. I often found it rather disagreeably perplexing, and I am sure others did too, to know which to choose among so many good things; and rather annoying to be obliged to miss tasting some of them

Next followed roast beef, and boiled turkey with rich white cream sauce, some mutton chops, sweetbreads, &c. The latter dishes, for the information of the uninitiated I may state, are called *entremets*, or side-dishes, and are cooked in a scientific way, for delicate or curious stomachs which cannot feed upon plain beef or mutton. Potatoes, ornamented dishes of turnips (without tops) and carrots, which with greens, vegetable marrow, and sea-kale, helped us to avoid feeding too heavily on solid flesh; and with the sherry and sparkling Moselle wine, gave great pleasure to the gratified palate. Many a pleasant sally of wit, and agreeable interchange of pledges by the wine-glass, heightened the pleasures of good fellowship; and as it was at the house of a religious professor, and some highly reputed religious persons being present, I believe all felt as I did, heartily satisfied with ourselves and the entertainment, and that we could not possibly be doing anything either wrong or inconsistent with our Christian profession, at least I am sure that was my feeling. I had so often been complimented for being a sound churchman, and as such a true Christian—and this by the ministry—that I for one was as content, and convinced on the subject, as if I had had Christ's testimony on paper in my pocket.

But to proceed with the business of the evening. It was now about seven o'clock; we had entered the room about six, and there was yet a good deal to dispatch. After the beef and turkey were removed, a pheasant, a hare, and a brace of partridges were uncovered; with dried bread-crumbs, gravy, and smooth bread sauce cayenned for the game, and red currant jelly and forcemeat stuffing for the hare. Of vegetables, little or none was taken, as we had already filled up some chinks with them, and they would prevent the fine flavour of game from being fully appreciated. Wine, of course, was from time to time supplied by the servants, who kept a sharp look-out on empty glasses, making it rather difficult for us to recollect how often they had been emptied.

The next course consisted of rich plum-puddings, brought in a blaze from spirits of wine being poured over them and then lighted, with custards, delicious tarts, syllabubs, creams, trifles,* jellies in pyramics, and sweets in various ornamental forms, according to the extent of the hostess's talent for invention. Champagne, as being of a more lively character, is served round with this course; and I well remember on this occasion, from the butler not having guarded his bottles from the severe cold, several of them were opened and taken away, not being found "up." These cost about 6s. 6d. per bottle, and when once opened are spoiled. After having solaced ourselves with these creature comforts—celery, cold and toasted cheese, with maccaroni and tankards of spiced ale, were introduced; and then again a short grace was said, and dinner finished. We had, however, by no means done either with eating or drinking. The table being cleared, fresh decanters of the best wine, and various fruits, were brought on, with brandy-cherries, preserves, biscuits, guava jelly, preserved pines, walnuts,

* AN EXCELLENT TRIFLE.—Lay macaroons and ratafia-cakes over the bottom of your dish, and pour in as much brandy and sherry as they will suck up; which when they have done, pour on them cold rich cream custard. It must stand two or three inches thick; on that put a layer of raspberry jam, and cover the whole with a very high whip, made the day before, of rich cream, the whites of two well-beaten eggs, sugar, lemon-peel, and raisin-wine, well beat, with a whisk kept only to whip syllabubs and cream.

almonds, &c. After the first round of the bottle, the ladies retired, and we sat chatting on various topics, sipping our wine, and helping ourselves to fruit, &c., as fancy inclined us. The feast and the good fellowship, with so many good people present, and the nicely warmed room, made us quite forgetful of the man with the turnip tops for his dinner and supper; and when, after a cup of coffee and a small glass of liqueur, we went into the drawing-room, to the ladies, we found all still *couleur de rose*. We sipped our tea, enjoyed the usual amusements of the evening, and took our leave about eleven o'clock to our various homes: there arrived, we said our prayers, asking God to "give us day by day our daily bread: lead us not into temptation, but deliver us from evil." Those slept who could.

I have been thus particular in this description for the information of those who may read this book, but who may never have had the privilege of *good* (?) *society;* and I will also assure them I have given a strictly true relation, as many poor jaded cooks and butlers can avouch. I will also tell them such feasts are of almost daily occurrence, at various seasons of the year, and at intervals throughout the whole year; and they are given and partaken of, not only by laymen, but ministers who esteem themselves both orthodox and evangelical. It is quite true, part of the viands I have described are sometimes omitted, not that there is either objection to serve or partake of them, but because it is not quite convenient for every one's pocket. After all this, the account has afterwards to be settled with the head-ache, heart-ache, gout, liver disease, congestion of the brain, and a long list of diseases brought on by a few hours' sensual enjoyment; yet total abstainers from alcohol, and moderate livers, who enjoy good health, are more the butt of society than those who by such feasts act more like heathens of old than Christians. I have long taken leave of head-aches on this score. Eating and drinking only to live, I find, brings me excellent health; and the satisfaction of having the ability to perform the duty God has assigned me brings a better reward.

We now enter upon the subject of CLOTHING.—No system of bathing will avail to keep the body in health without attention to this point. It is the fashion at most Water Cure Establishments to prohibit all under-clothing. In some establishments no sooner does a patient arrive, but the doctor requests all flannels to be dispensed with, saying they prevent the free action of the air on the surface of the body. This theory, however, is found impracticable if patients are to make any progress in expelling morbid matter from the body, or quieting irritated nerves; for until the vis vitæ, or power of life, is raised and kept up by warmth, the cold only causes greater internal congestion. The vital power must first be strong enough to cause circulation of warm healthy blood on the surface of the body, then the patient may use lighter under clothing, but not without caution in this uncertain climate can it be dispensed with altogether. Very fine woollen under-clothing even in summer keeps up an even temperature on the skin, and allows evaporation without a sense of damp, which perspiration causes to the wearer of either calico or linen. The demand for light gauze under-waistcoats made of foreign wool, or silk and wool, is very considerable, even for the East Indies (whence the name of India gauze) and other hot climates. The late Duke of Wellington found he could not keep his men in health with their linen pantaloons, and ordered the use of under-clothing and cloth trousers. I have myself frequently seen much mischief and suffering caused by the attempt to harden the body by exposure; and have known cases wherein such a course pursued at some water establishments has resulted in permanent injury to the constitution, and some have resulted in loss of life. I do not by any means advocate persons coddling themselves in flannels; the rule with me is to advise all my patients, and others, to wear just sufficient to keep the surface of the body warm. In cases of invalids, where the vital power is low, warmer clothing is required than by persons in good health. More warmth is required by those who lead sedentary lives, and especially by those who have much brainwork; as such work draws on the electricity of the nutritive organic nerves in aid of the brain, and consequently lowers the vital power of the body, and neither invalids, nor any

without a strong constitution, can dispense with it, and regain or preserve health. Warm clothing, especially in winter, preserves the vital heat, and, consequently, aids the action of the liver, stomach, and especially the bowels, as Dr. Gully justly observes: "Great mischief is done by attempts at hardening the body by exposure to cold; the blood is driven from the surface to the internal organs, causing congestion in them, and numbers in this way lay the foundation of very fatal complaints." The lungs are most sensitive to an overcharge of blood. The feeling of chilliness or excessive heats must be the guide. In summer, caution should be used by not overclothing the body; but in autumn, when cold, wet, or frosty days and nights come on, all persons, but especially the delicate, should begin to take precaution, by paying proper attention to their clothing. The omission of this often lays the foundation of fatal disease, as when cold has got hold of the frame it is not able to shake it off as in summer. It is not how little clothing persons can do with in autumn, winter, and spring in this cold, damp climate, but how much they can bear without perspiring. We have had extensive experience in this matter; hundreds have come to us with disease, the foundation of which the patients could trace to cold caught from not taking these precautions. As to light clothing hardening the person, a moment's consideration will show the fallacy of it, for if the nutritive blood is driven by cold from the surface it increases the heart's action to overcome the obstruction, and if the absorbents on the surface of the body are closed by cold, the evaporation of the natural secretions is prevented, and the matter thrown on the kidneys, and deranging the stomach and liver, the liver especially is most easily deranged by cold. All this may easily be prevented, life and suffering saved, by simple common-sense action. Our body bandages, Bath list 163, 233 to 236, keep in warmth in the digestive organs, and are all-essential to health and life. (See Home Treatment, Index.)

The following is the case of the Hon. H. Tucker, South Africa, who came to England to have his arm amputated. His uncle, residing on the borders of this county, brought him to me. I said I had not had such a case, but that if we could not cure him he would be in better order for any surgical operation. We went our usual way to work with such cases, comforting and stimulating the part with hot fomentations, linseed meal poultices, spongio piline, then treatment for his health, as he was in a low state from the great suffering he had undergone. We gave a 50, 141—64, 141, 48, 13, 10 on 168¾, 220, 169¼, and packed the whole arm with spongio over the poultices. His health soon began to rally, but no signs of any improvement in the arm for several weeks, after which the arm began to swell enormously and with great inflammation. I had then in the house as visitors two M.D.s and a surgeon, and showed them the arm. They said unless a free and deep incision was made the matter would burrow under the fascia or skin covering the bone, and he would die of mortification. I replied I was glad they had an opportunity of seeing the effect of our natural treatment, and expressed my confidence that now the arm had got life in it, the patient would get quite well, and the result was so, and he left us 14 lbs. heavier than when he came, and long after I heard he was sound. An enormous quantity of matter came away, making, in fact, a new man of him. It will be seen by his statement that all previous treatment could not effect a cure:—

T—— Parsonage, April 6, 1860.

My Dear Sir,—I deem it due to you to send a sketch of my case. About sixteen years since I was thrown from a gig with great violence, owing to collision with a heavy wagon occasioned by drunkenness of the driver. The apparent hurt was fracture of the right collar bone; this was set, and in about six weeks I was to all appearance quite recovered. This continued until about three months after the accident, when, on putting my left arm forward to reach something, it became suddenly fixed, with the elbow in my side; this relaxed a

little, but severe pain and swelling of the arm between the shoulder and elbow joint ensued. The usual experiments with leeches, lancing, poulticing, fomenting, &c., were gone through, but little relief or hope of recovery was entertained until a free discharge took place, and even after that time mortification was feared, and it was proposed to take off the arm. I felt so weak that I refused to submit to amputation, being certain I should not survive it, and telling the doctor I would rather die with the arm on. After about twelve months a piece of bone worked out, and during the two years following upwards of twenty pieces followed. At length, by exercise and the blessing of God, my health was re-established. In 1848 I went to South Africa, and never experienced inconvenience from my arm until severe and continued exposure during the Kafir War brought on rheumatic fever; it swelled in the poor left arm and troubled me for some time. From that time to the present it has troubled me at intervals of between two and three years. The violent appliances used in the treatment of it have at times brought me very low, for instance, boiling hot fomentations of poppy-head and camomile flower, followed immediately by tar plaister; these succeeding each other soon became sufficiently counter-irritant to bring off large pieces of flesh. Another remedy was rubbing in a burning ointment, until the agony was too great, and I was compelled to try something else. These and other barbarous remedies were tried on the last occasion that my arm was troublesome in Africa. About three years since I providentially met with Dr. Hutton, who gave me some very simple pills as alteratives, and directed to dress my arm with plain bread poultice; this treatment was successful for a time; I never felt pain again until last September. After my return to England it became then so painful that I could not rest either night or day; thus I suffered for nearly ten weeks before my attention was directed to your establishment. The mild course of treatment I underwent at Matlock Bank had the effect of relieving the pain in the arm in three days, and after that my constitution rallied, so that at the expiration of ten weeks my arm was again serviceable, my health thoroughly restored, and I was able once more to mingle in the busy scenes of life. The wonder to me is that such effects can be brought about without the use of medicines. From that time to this I have discontinued the allopathic treatment altogether; smoking and the use of beer, wine, spirits, &c., I have entirely abandoned; and I thank the Giver of all good that my steps were directed to your truly philanthropic establishment, for there I became acquainted with what I believe is the true science and application of the water treatment. It has enabled me to be of service to several friends; and I doubt not that on my return to Cradock I shall have the pleasure of applying it for the benefit of some who require it, in addition to practising it in my own household. In conclusion, I beg of you to accept of my warm thanks and acknowledgments for your unremitting attention and Christian kindness, and to present the same to Mrs. Smedley, for the kind interest she evinced in my case. I pray that you may both be spared many years to pursue that course of noble devotion and attention to the alleviation of the suffering of our common humanity.

APPLICATION OF HYDROPATHY TO DISEASE.

Cases.

No. 1.—It was my intention when first I thought of this work to have given a large number of cases, but experience in my establishment has convinced me that it will not be advisable to do so. So frequently have patients come to me with Dr. Gully's book, in which a great number of cases are inserted, and the applications described—and said such a case was just their own, this feeling and that symptom was exactly described—when in fact their case and the one described really bore no analogy. Except in giving some general idea how some are treated by our applications, I think it would only be liable to mislead patients by giving more particulars of

cases. Still I believe these general directions will be serviceable where the cause of disease is easily ascertained. The development of disease varies so much in different sexes and constitutions, that when there is anything more than ordinary derangement of the health, none but practical observers can form a correct opinion of the causes of disease. I have seen much injury done to nervous patients by studying cases, and following the treatment laid down for them in books, without the requisite knowledge derived from practical observation.

OVER-WORKING THE BRAIN AND NERVOUS SYSTEM.—There is a large class of diseases arising from this cause; and just now, whilst writing, the proprietor and manager of a popular country newspaper is consulting me about his state. He says that last night he got no sleep, his mind was running on a hundred subjects, and he had no control over it. To-day, of course, his nervous system is wearied and excited, with not much probability in the present state of his bodily health of having a better night. He has taken a short trip from home for a change. It will do him some good; and help him to carry on a little longer: meantime the lamp of life is burning doubly rapid, and consuming the frame twenty or thirty years sooner than God intended. On examining the case he informs me that he has gone to his office on Friday morning at six o'clock, and stayed till Saturday afternoon without rest. Now, surely if a man studies the nature of his frame, and the conditions of health, he will see this is a really reckless and destructive course, which no considerations can justify; and which, moreover, I believe to be really a trespass on God's laws and man's responsibility. How can such labour be compatible with the calm consciousness of the high mission God has given man to fulfil? And, besides, even the object which man aims at is lost, for if even wealth and an independency be gained, there is neither power nor life left to enjoy it.

I know it will be said by many, "I have no choice, I have an office in the counting-house, or in the shop, and must go through the work required, or resign my situation; and what can I do?" Alas! that this should be the case from the avarice of employers requiring such overwork from those employed, because others in the same line of business require it, and therefore having an idea that they must do the same to meet them in the market. I know cases, where the clerks and warehousemen, or shopmen, of wealthy professing Christians, who give largely to charities and the building of places of worship, have lost their lives from confinement, bad ventilation, and the every-day pressure on the nervous system, without proper means of complying with nature's laws, assisted by baths and due rest of the brain. I see such assistants drop off from the counting-house or such other places, and other young men step in from the country to be similarly used up. Let employers, and especially those who profess to be Christians, look to their responsibility in these matters. I have at this moment more than one or two in my recollection who have been cut off in the morning of life, leaving young widows with young children to struggle on the journey of life with the thousand difficulties that beset them; but their late husbands' rich employers still use up others, still give money to charities, still live in style with their liveried servants, and give good dinners. To such the Lord says, "Many shall say unto me in that day, Have we not prophesied in thy name, and in thy name cast out devils, and in thy name done many wonderful works? but I will profess unto you I never knew you, depart from me, ye workers of iniquity." I believe the standard by which the Lord judges will be found far different from that used by what is called religious society. HE never approved of compounding in religious duties, by giving with one hand what has been wrung out of the bodies of servants with the other. I do not condemn all indiscriminately; for some, I believe, have not had their attention drawn to this important subject, and as I shall have to remark further on, even when the means are at hand, some are too indolent or careless to use them. I leave this to reach those whose minds will, I am sure, convict them, if they do not stifle their consciences, and turn to the customs and opinions of society for justification. Wretched delusion! if they do: for they know well the customs and laws of this world will not be allowed to be put in plea in that higher court, to which we are all hastening.

The first part of this little work shows the constitution of the bodily frame, and its motive powers; and the dependency of the organic part of our frame on the vis vitæ, or power of life for existence, which springs from the healthy state of the higher order of nerves called the spinal cerebral. Lower this power to a certain degree by over-work and improper or insufficient nourishment and rest, and the breath of life which the Creator has breathed into man, making him a living soul, is expelled from its earthly tenement; the dust returns to its parent earth, and the soul to God who gave it, to give an account of the deeds done in the body. Such is the feeble and transitory nature of the soul's tenancy in the body, that we see apparently from slight and silent and to us unseen causes, the connection broken, and the tenant turned out with little notice; and how many spirits, from remediable causes, are compelled to dwell in shattered and miserable bodies the remainder of their sojourning in this mortal state. This should not be the case, nor would it be, if mankind acted on the Christian principle of serving God, and fulfilling their high and noble mission.

First, teach mankind to know God and their great Mediator; then teach them the nature of the body in all its marvellous structure. Let them be impressed with the fact, not merely an idea, but the solemn and undeniable fact, that they are responsible for the use they make of their frame, and of the faculties it possesses, and which alone can be kept in a fit state to perform the grand mission it is charged with, by obeying the conditions of health. If employers did this, they would not themselves be using up this precious body for money or transitory and worthless honours; they would not require of their assistants to use up their noble faculties in their service, until they are become so benumbed that they have often to perform their services more like machines than spiritual beings.

I write this, from dear-bought experience, to show the necessity of attending to the bodily machine, if any comfort is to be enjoyed in its existence. For the mind, however highly endowed, is dependent for a deal of its happiness on the state of the corporeal part. For many years I worked fourteen to sixteen hours a day, and often the night too; taking no precautions in the way of baths, and I never knew a day's health for twenty years. Now, however, by attention to diet and baths, I can go through as much labour with perfect ease and excellent health. I never have a holiday; my thousand work-people, free hospitals, hydropathic establishment, writing tracts, and Sabbath lecturing, &c., forbid it; nevertheless I know real enjoyment, with quiet nerves, and a mind without any corroding care. I believe God's word—that all who serve Him sincerely are His children, and that He will keep them from all evil and in perfect peace. The corroding care I leave to my Master, according to His command.

Having said this much, I will now endeavour to point out some remedies for preventing the distressing state of disordered nerves and functions of the body.

If employers and assistants would be at the trouble to use a very simple plan of bathing, they would be amply repaid. First, employers should find the means, by appropriating a room or chamber for the purpose, with a few sitz baths, one or two shallow baths, a steamer, some sponges, and sheets. This book will show what is necessary for hydropathic baths (the expense of which is trifling), and I will gladly furnish the articles at cost price. I will also send an experienced bath-man, or attend myself, if possible, to give instructions in their use, if needed. Five to fifteen minutes, or even less, would suffice for most of the baths. The body refreshed would soon repay the expense incurred, by rendering the individuals so much more capable of performing their duties with efficiency. I have been so convinced of its good policy, both as duty and as profitable in a pecuniary point of view, that I have provided my work-people with baths, and also a cooking-house and servants, who prepare their meals, and I supply Scotch oatmeal porridge with golden syrup or milk for fivepence per week; I also supply a pint of tea or coffee with sugar and milk at one halfpenny per pint, or they can make their own. I give my factory hands an additional half hour each morning for religious worship, and for hearing any important event going

on in the world. We all assemble (those on the premises number about 350) in a room in the winter, and in a marquee during the summer, from half-past eight to nine. The mind and body are refreshed,—time is given for reflection that we are made for nobler purposes than merely working for the support of the body; and there is a state approaching in which there are no factories, no avaricious or unfeeling masters, nor any thoughtless or indifferent to the welfare of those around them, and where the factory hand may be found amongst the highest: for the apostle James says, "Hath not God chosen the poor of this world rich in faith, and heirs of the kingdom which he hath promised to them that love him?" Many a labourer or factory hand is now here numbered amongst the redeemed, and they will shortly be translated to where the weary will not only find rest, but inconceivable happiness and for ever. "Be patient, therefore, brethren, in well doing, unto the coming of the Lord. Behold, the husbandman waiteth for the precious fruit of the earth, and hath long patience for it, until he receive the early and latter rain. Be ye also patient; stablish your hearts: for the coming of the Lord draweth nigh." And thank God, that all may come who will come and drink of the water of life freely.

Our daily summer morning services in the marquee amongst the beautiful scenery and surrounding woods will never be forgotten by those who have attended them, and long will they remember the glad chorus of the birds, warbling their morning songs in harmony with our own.

I believe most of our lives have been prolonged and made happier by these services. Even now the recollection of them in years gone by dwells on the mind with pleasure, and I hope we shall always continue them while we stay on earth. Every now and then one of our number departs from these earthly scenes, to those blessed regions we read so much of; and their happy spirits, I often think, may be present with us. The greater efficiency of the work-people, by these relaxations, is beyond all doubt, and a feeling of family compact is produced, which greatly lessens the trials of labour.

On the score even of pecuniary profit I can recommend employers to give their assistants opportunities for these exercises; it would have, I am sure, an important effect on their characters and habits. Their over-wrought, wearied, and feverish frames want rest and enjoyment; and they too frequently seek relief in practices that aggravate the evil effects of fatigue they have undergone. The contrast with the baths, &c., as prescribed in this work, would soon be evidenced in the vivacity and cheerfulness of the work-people. The system being in proper order, the blood would be well circulated, the hot skin relieved, the functionary action of the viscera kept up to a healthy standard, and increased powers of usefulness, with a good will to use them, would be the result; and further, the employer would first have the great satisfaction that he was acting as a steward ought to do towards those over whom God has given him charge; and secondly, he would find it the best policy to have his assistants as full of life as possible to aid him in his enterprises.

I have stated before what plan I used; I however repeat that the simplest plan of baths where there is not much accommodation, is to have some water in a sitz in the bed-room over-night, on rising spread a mackintosh sheet on the floor to save slops; sit five minutes in the bath with legs out, with a blanket thrown entirely over the body, then have a cold dripping sheet, or washing sitz, or cold sponge; the dripping sheet alone is best for winter, and at all times least trouble, and generally most efficacious, and dry with a sheet, not with towels, as the body is too much exposed, and animal heat lost; if time, soap over with common yellow soap, and a small flannel pad; or a hot dripping sheet followed by a cold dripping sheet, or five minutes vapour and cold dripping sheet or cold shallow, is very refreshing. A vapour followed by a cold dripping sheet or cold shallow may be taken with much benefit at eight or nine o'clock in the evening; a sitz bath five to ten minutes, 70 deg. in winter and cold in summer, before getting into bed, with the feet in hot water or without hot water, often relieves the head and gives sleep; but if suppers, tobaccos, and alcoholic drinks, pastry, &c., are not totally discarded, no person can be in a safe state of health.

The use of the wet body bandage I resort to a good deal whenever I have any extra work or over-fatigue. I throw it off without any substitute, never taking cold by so doing, and however much it is worn, it will do no harm. This wet body bandage and sitz bath are my sheet anchor, when hard pressed with mental work, and do wonders without any possibility of harm: occasionally I wear the wet bandage through the night, in case of indigestion or cold, and a flannel wrapper over it. See Bath list, 163, 233 to 236.

HYDROPATHIC PRACTICE.—Hydropathic practice is too much understood and practised as a system of cold treatment; drinking large quantities of cold water, with all the hitherto strange methods of applying it in douches, wet sheets, and various modes, by which the body is not renovated and strengthened, but the vitality washed out of it. The "cold water cure," I repeat, as it has been and is now often practised, is an outrage on the true principles of hydropathy, by which the body is kept in health and life; and the exhibition of this ignorance by many Hydropathic practitioners sets such of the medical profession as are unacquainted with the system very justly against it. They correctly judge that the application of merely cold water to the majority of the cases of their patients would only increase congestion in the parts, and thereby lower the power of the viscera to perform their functions. They hear of some absurd applications of cold water to attempt to rouse power where there is low vitality; and they judge, if a hydropathic practitioner will commit one blunder against all scientific and correct knowledge of the nature and functions of the human body, that he makes others; and so they condemn hydropathy and hydropathic doctors *in toto*.

Hydropathic practice is of recent introduction into this country, and in Germany too, where Priessnitz first accidentally came into note. Priessnitz was a peasant, and had no scientific education, and, what was a greater defect in him, he despised such education; and the result of this was that, with powerful means of restoration in his hands, which he used by trying their effects in cases without any sound reasons why such applications should succeed, he committed many errors. He tried the practice in some cases and succeeded; he tried the same in others, which not only did *not* succeed, but did injury or destroyed life. Priessnitz's was a system of experiments without a scientific knowledge of the symptoms and causes of disease, or of the varieties of constitutional peculiarities. This is unjustifiable, for if a practitioner does not act upon principles deduced from a knowledge of the nature and action of the constituents of the human frame, he is a mere charlatan, attempting to cure disease. I never give a bath without duly considering the various organs or parts in the disease implicated; never as an experiment. The great error Priessnitz made was in despising scientific education; he saw what gross blunders practitioners made in practice, and thence condemned them altogether, to the shortening of his own life. Physiologists and anatomists must have the best knowledge of the frame; but it is their applying anti-vital remedies I object to.

Hydropathic practice has been taken up by some who could not succeed in their medical profession; and who, consequently, were not the best men to bring a good stock of scientific knowledge of physiology and anatomy to bear upon the subject. Others, again, who have undoubted physiological acquirements of the first order, and are convinced of its efficacy, are overwhelmed with their practice; and it is utterly impossible, with their present plans of practice, to carry out the minute detail of the water cure as much as is required. The same care and judgment are as necessary in applying water as in compounding medicine, and understanding and watching, as a good physician does, the complications and phases of disease. Large establishments, where the charges are such as will afford to pay for scientifically educated assistants, should have such in proportion to the number of patients, and also sufficient apparatus and bath-men in proportion. In a hydropathic establishment, where the practice is properly carried on, there are so many manual operations that in reality it very much resembles in its processes a manufactory, with the proprietor, overlookers, and workmen. Moreover, to carry on a Hydropathic Establishment with success, it should

be in a properly arranged and well-conducted establishment, and also be confined to the establishment. Rooms for work-people, with their stock of flannel, spongio, calico, oil silk, tapes, ribbons, and patterns, for compresses, bandages, &c. Likewise tin, zinc, &c., for baths, &c., where articles can be made or altered on the spot, are almost as essential as bath-rooms and baths. Then "*the feeding the animals*"—as a physician, alluding to the patients, remarked to me, he could not condescend to do—is in this system as necessary as directing the baths. The clothing also is of the utmost importance to see to. I find delicate, cold-blooded patients with cold feet and hands, come with their fashionable, thin clothing, and light cotton stockings on, in cold weather. *No treatment can succeed unless all these points are attended to.* Hydropathic therapeutics, scientifically speaking, or, in plain English, the hydropathic mode and principles of cure, are put before the public as a sound hygienic, nature-restoring system of curing disease, and bringing the body into its normal or primitive state. Its professors discard all attempts to bring the body into its proper state by the forcing or deadening system of drugs, blistering, setons, bleeding, and the thousand other forms of doctoring, by which mankind have been tortured and slaughtered for generations. There certainly is no lack of minute and elaborate methods employed in ordinary medical practice as to these matters, but often a total disregard to diet, clothing, and habits. Now, if the hydropathic physician stands upon the punctilios of his profession, and declines, as one who offered to join me did, to have anything to do with the unprofessional and common employment of seeing personally to the application of his remedies, in the shape of baths, bandages, food, clothing, and habits of life, it is impossible he can do justice to his patients; and until hydropathic practice is studied in the bath-house, and looked upon by the practitioner as an office requiring the most particular and personal attention to the manual processes, or as a superintendent over his assistants, he will not bring the system, in its wonderful health-restoring principles, in its true light before the public. The practice of giving baths at private lodgings, by bath-attendants going their rounds from one house to another and the doctor only seeing his patients perhaps once a-week, is utterly unlikely to give a patient a fair opportunity of cure. They cannot have proper bath apparatus, nor the attendance they ought to have. In the simple matter of giving a dripping sheet, the patient is often made to stand in the cold water in the bath, while it is given, to save trouble and slops on the floor; this is bad; or the sheet is partially wrung out, which makes it less effective. A bath may not have suited the patient,—there is no bath-attendant to refer to, nor the requisite quantity of water. I should not dare to prescribe baths under such circumstances, except to those who merely require home treatment. I saw a case in point when on a visit to an establishment a short time since. I was consulted by a friend, whose sister, a delicate lady about twenty-one, with but little blood in her body, had been ordered to have a wet pack daily at her lodgings. They had to rub her hours after the pack, to get circulation; and from the time of having the cold wet pack one day, to the one next day, she was never warm; yet the patient and attendant thought it must be persisted in, as it had been prescribed. This was highly dangerous in this case. The attendant had no machine even to wring out the cold wet linen sheet, and the doctor was only to be seen once or twice a-week, and the week I was there he did not see the patient once. When he did see her, he ordered the pack only every other day; the same effects were produced, and packing was stopped. The lady remained there three months, at a heavy expense, and returned home rather worse than better. No wonder her medical man at home denounced such imposition and ignorance in attempting to cure disease. The husband of a lady has since come from near London to consult me on his wife's case: she, too, has been at the "*cold water cure.*" It is a case of severe chronic rheumatism, making her a cripple. Nothing but cold water has been applied for ten weeks, at an expense of £40, and she is worse, and no wonder. Whenever one of my patients does not become warm in a pack, or after a cold sheet or any cold bath, does not get reaction, a vapour bath is given, or hot and cold dripping sheets, and packing stopped until there is more power. It is not safe to leave a patient in pack without an attendant near. My packing, except in special cases,

which are always properly attended, is done in the bath-house, where attendants are always by, and is so contrived that it is quite private. My patients can converse while they are in pack, and nervous feelings are prevented. To many it is a very formidable operation to be bound up fast in sheets without power to extricate themselves; and great danger may result to nervous persons by being left alone.

I make no pretensions to the knowledge of physicians who have gone through the dissecting room and the usual laborious curriculum of medical training; but I can successfully compete with them in curing, and that on sound and certain principles, as the state of my establishment and the testimony of numbers who have before tried hydropathy in vain for cure testify. Few physicians will condescend to attend to the minutiæ I name as absolutely requisite for carrying out this practice as it ought to be with jus ice to the patients. I have been trained to business habits in my manufactory; I have to see personally into the minutiæ of every operation, acting on known principles; and I do not consider for a moment it would be compromising my position as a master by even seeing to the state of the floors, the dirt and grease, and the ventilation of my factory, for I know I could not long keep the lead in my branch of business were I not to see to these matters of detail, as well as talking with my bankers and wool-merchants as to the prospects of the money and wool markets. Far from despising scientific knowledge, I have considered it to be my duty to read and study physiological works every hour I could spare for a long period, and also to keep up with new works published on the nature of disease, &c.

I hope to see hydropathic practitioners with high physiological and anatomical knowledge content with some thousands per annum, and spending the surplus above in engaging young surgeons and physicians to help them, in proportion to the number of patients. Let them then, with their assistants, hold a cabinet council every other day, and compare notes, and in any critical cases every day. This plan would soon put hydropathy in the place it ought to occupy in the estimation of the public.

THE SYSTEM OF HYDROPATHY, CRISIS, &c.

If any person submit themselves to the hydropathic treatment, who have serious mucous inflammatory action of the viscera, or have much morbid matter in their system from paralysis, old inflammatory attacks, &c., &c., under the idea that two or three weeks' active treatment will restore them, they will be much mistaken, for probably by that time they will be in an *apparently* far worse condition than previously, and may be, from crisis, quite laid up. If health only partially deranged, a short time and no crisis will well repay the time and trouble of a short trial, and will give important information for the remainder of life. Crisis (boils or eruption) cannot be produced by any hydropathic treatment or bandages in a healthy person; and just in proportion to the amount of disease, so is the amount of crisis. Some patients, who have not much the matter, may have a slight rash or a small boil or two; some none. As I have observed in another place, the body may be in a very disordered state, simply from weakness of the digestive organs, and the vis vitæ, or power of life, not being sufficiently strong to cause the proper medical change in the food after it is dissolved in the stomach, acidity follows, and afterwards fermentation.

The grand principle of hydropathic treatment is, that it so invigorates and purifies the whole system, that the laws of nature, which will not bear the presence of morbid matter in the system if there is power to expel it, come into full force, and the poison is no sooner put in, but the healthy tissue, glands, &c., unless overpowered, are offended by it, and set about throwing it off by crisis, diarrhœa, &c. Many, who are horror-struck at the sight of a drunkard destroying himself body and soul, are quite easy when performing the same operation upon themselves in a way slower and less offensive to society, but which nevertheless is suicide after all, simply to gratify the depraved nature.

Nature never cures disease but by crisis in some form or other. Scarlet fever is a

crisis to expel inflammatory morbid matter out of the system; and when it is over, and the patient recovered, it is notorious how much better the subject of it is than previous, if the body is not saturated with physic. Small-pox is crisis. That shingles and scarletina also are crises of the same kind, is a doctrine acknowledged by the allopathic practitioners, in the form of counter-irritants, such as setons, issues, and pustules produced by mercurial ointment, &c.; but these are forced crises, and the body is made to produce crisis whether there is vitality or not, and in the places also which the doctor thinks it most convenient or most effective; and with this forced crisis he often draws out the vitality of the body, or of a part, that is never restored. Nature will not be treated like a carpenter repairs a piece of furniture, and it is the height of presumption to attempt such practice. The grand error, the fundamental error, of allopathic doctors, lays in not recognising to its full extent the curative powers God has implanted in the body. We frequently hear of practitioners, as they become old in the profession, acknowledge how little good they have ever done by authorised modes of cure. I believe, if every doctor of long experience was examined on this point, he would say, as those do I name in this work, that the more experience they have had in the practice of physic, the less confidence they have in its powers of cure, but have seen plainly how often it causes injury. A retired surgeon, who has stood high in this country, observed to me lately that he had practised thirty-eight years, and quite long enough to lose all confidence in the remedies for disease. He was himself in bad health, and had been so many years, and never could succeed in curing his maladies; and besides, he said he had the advice of the best physicians, all to no purpose. How often the surgeon sees crisis in nature attempting, and succeeding too, in curing disease of the lungs by abscess; the unhealthy matter is discharged, and leaves the lung sound; the abscess has cured the lungs; the same by the liver; and it is notorious that boils are healthy, as the popular phrase runs. I am asked sometimes by patients if I am prescribing treatment for crisis. I say, no. We endeavour to raise the general health by our comforting system. We neither aim at producing the troublesome and often painful crisis, nor are we alarmed if it comes. If the skin is attended to, the circulation regulated, the viscera got into good order, nature will throw any morbid matter off in the easiest and best way; but we cannot dictate to her where and how it will be done. While we are attempting to improve the circulation and secretions in the liver, a boil or boils will come out sometimes in the posteriors, where we have made no particular attempt to bring out crisis. Sometimes, and whenever it can with safety be done, it appears, nature passes it off by the secretions rather than trouble the body with rash or boils; and we have had patients quite cured by rather active diarrhœa. I have a case of chest disease now being relieved by crisis in the arms, which have been packed as No. 214. Sometimes in such cases a large boil has come in the arm-pit, or near, and cured the patient.

After all, it is impossible to go against nature's laws in curing. If boils or rash are necessary, the patients should rejoice that they have vitality enough to cast the matter off, and in the great number of crisis cases we have had, I have never seen anything but good results by the most severe crisis; and never in the most delicate have any evil results followed, but always the contrary. Many thousands have been cured without crisis; crisis is, indeed, the exception, and not the rule.

Our experience convinces us that we cannot push crises too much, or too quickly get the morbid matter out of the system. Inflammatory matter cannot but be distressing to the sensitive nervous system, and dangerous to the whole structure; and the sooner it is got rid of, the better; although the withdrawal of it, by reducing the nervous irritation, apparently makes the patient appear weaker; but it is not really so, for the patient then only becomes conscious of the real state of the body. We have often to contend against this idea of becoming weaker under the treatment; and patients often do themselves harm by taking an extra quantity of food, under the idea of keeping up their strength, when in fact the state of the body not only does not require it, but from the lower power of digestion by their state of health, it is

positively injurious. When the body is out of order, it is manifest the powers of digestion and assimilation are impaired, and, until the state of complaint is removed, even a usual amount of food must evidently only further overtax the powers of the viscera. People do not overcome disease merely by eating a larger quantity of food. We never fear the complaint of weakness; it is always, in disease, a precursor of improvement in all cases of chronic disease or complaints of long standing. When there is simple functionary derangement, we often find patients begin to get strength in a few days after commencing treatment.

The only point we fear in crisis is the patient leaving us, and applying to medical practitioners when under it. Medical men do not understand it, or will not recognise nature's own curative work; and, if leeches or stimulants are applied, the healthy operation of nature is stopped, and the inflammatory morbid matter prevented finding an outlet where it is the safest, to be thrown probably on to some weak vital organ, and so cause irreparable mischief. I have had cases who have left me with crisis, or crisis has come on after returning home; the medical man has ordered stimulants and flesh meat, to keep up the strength of the patient; these have added fuel to the inflammatory matter in the system, and the leeches or aperient have combined to so lower the vitality, that in one case it was fatal, and in other cases caused many months of suffering, by stopping nature in her work. There is not, I repeat, the least risk with crisis, if only the most ordinary attention is observed as to diet and washing with tepid water, until nature has performed the cure.

Supplementary remarks, with a few articles which have been omitted insertion previously.—I have given a short extract from the remarkable and interesting work by Sir John Forbes, on "Nature and Art in the Cure of Disease;" which shows that some of the faculty, and those of high standing in the profession, are aware how much mischief is done by practitioners not acknowledging the curative power inherent in the living body. Sir John describes it, very appropriately, as the conservative power of nature. The experience we have had in the treatment of the hundreds of cases of disease which have come under our charge, this year, corroborates those remarks—that whenever the medical adviser presumes to dictate to nature, instead of studying her laws, and gently helping her infirmities, where he can discover them, he is sure to do mischief, and often irreparable mischief. For instance, to attempt to rouse vitality by strong measures, when very little exists, is very much like poking the last spark of fire out of the dying embers in the grate; but how often this is done, is clear by the faculty's own theory. The doctor thinks the blood wants more iron to stimulate; he forthwith gives as much iron mixture in a dose as nature would supply to the frame, by natural aliment, in a month; and he repeats the dose daily, perhaps for weeks distressing and poisoning the body, until he finds out that medicine does not cure, and he then alters the mixture. The bowels do not act, either from want of blood or from want of bile or warmth; he gives as much colocynth or mercury, to supply the deficiency of the natural stimulant, in one dose as nature would supply in weeks; the dose has sickened the organs, and they forcibly expel the offensive physic at all hazards of injuring the absorbent and mucous lining of the parts. Nature will not own the curative power of the physic. A surgeon lately came to me to inquire into our system of Hydropathy, with a view to practising, and requested information. I began by saying that it never enters into our heads that water can cure disease; and just as I should advise a medical allopathic practitioner to cast out of his mind, when he leaves his college, that he is going to cure disease by physic, the lancet, blisters, &c., so I should advise any one studying to practise Hydropathy to leave out of their calculations that water in itself would give him a power to do so. It is the *vis medicatrix*, the medical power left in the system, be that more or less, which is to be nursed and gently helped; and it is this power which alone will cure. To attempt to evoke a power in the debilitated frame which does not exist is simply ignorance of the nature of the frame. But so it is; doctors, allopathic, homœopathic, and hydropathic, are educated to cure disease, and restore

the diseased or worn-out frame. The public superstitiously believe in their power to do so, seldom thinking or judging for themselves during the process of the attempt. The most destructive means are submitted to, until, as one of my patients told me yesterday, his medical advisers said they had exhausted all their remedies, and could do nothing more for him. He had been under several men of high standing in a large town ; one had tried one scheme of medicine, another a new plan, all to force nature to do what they wished to be done ; the last had dosed the patient with hydriodas potassæ, but nature would not own its curative powers, and only was more distressed with its presence. When practitioners of all systems of cure will come down from their scientific chair and own Nature's power of cure, carefully watch and study her operations, and see how she guards against mischief, and repairs diseased parts, they will succeed in making friendship with her, and she will teach them many secrets not acknowledged in the London Pharmacopeia. But this is a hard and humble pill to take, and few but old practitioners, such as Sir John Forbes, who has now done with practice, have courage to brave public opinion, and honestly own they have no curative power in their possession, and can only be humble servants to this conservative power of nature. The simple want of heat is one great cause of suffering and ill-health in thousands ; and this can often be remedied simply by thicker clothing and more care in not exposing the body to cold when feeble. So simple a remedy is, however, so little esteemed, that the doctor who told his patient he only wanted a thicker coat and a flannel waistcoat, and not his purgatives, would have little chance of getting a living by his practice. Sir John Forbes truly says, the public force practitioners into a line of practice against their better judgment.

I have had cases of invalids who have never known what good health is in the autumn, winter, and spring ; they had have no disease upon them, and so their doctors have told them ; but they have never been well, except in summer. Here was cause and effect plain enough ; the doctor knew it as well or better than we did, but he dare not tell them that if they would clothe more in accordance with the change of the seasons, and would be more careful in their diet, especially at times of the year, the functions of the body, in this uncertain climate, are less able to perform their work. If he did so, they would indeed think they had paid for advice very foolishly. No, they must have something to take that will save them the trouble and expense of clothing, or the necessary self-denial in habits of life. It is now the first of November. Patients are coming almost daily, broken down in health ; some in the last stage of disease, clad precisely as in summer ; eating as much as they can, under the idea of supporting life, when at the same time the stomach wants entire rest, if it were possible to afford it ; but as that cannot be done, requires the least possible amount of work, until it has regained its abused power—abused by over-eating, or by physic, stimulants, tobacco, cold, or hardships.

The medical art, in all ages up to the present time, is looked upon by mankind as requiring a great amount of learning to understand, and powers little or not at all short of the wizards of old. Men like Sir John Forbes deserve the thanks of their species for endeavouring to expel this delusion, so far as regards ordinary cases of derangement of health, and pointing out the wisdom of people studying their frames and the simple laws of nature. I have had numbers of cases of functionary disorder cured in two or three weeks, and sometimes in less time, simply by teaching the patients how to wash their bodies, to clothe properly, and to live on simple natural diet. Some of these cases have been quoted as marvellous cures, beating the doctors out and out, when, in fact, there has been no science employed or called for ; and their doctor would have done the same for them, if they would have submitted to his advice, in a similar way. People should remember, life is heat, and without heat the body dies. With lowered amount of heat, the engine will not work ; the wheels will not turn but by force, and the engine often breaks in the continued attempt. Where heat cannot be got by exercise and by strong blood-making powers, then try

other and simple means; but do not attempt to work the engine of the body without heat—it cannot be done. One word more: do not try to get heat by alcohol—that is impossible; the momentary heat gained is soon lost.

Bleeding for inflammation is diametrically opposed to the recovery or restoration of nervous vitality, and nothing but the restoration of this vis vitæ, or power of life, can subdue inflammatory action; yet the plan of further reducing that power, by prostrating the system, is now in full practice: the quantity of blood in the body may be reduced for a few hours, or a day or two, but nature soon fills the vacuum, but not with such good blood as before; she has been weakened, and the power to make it is reduced. Bleeding always lays the foundation of weakened vascular action, and of disease to be developed on the first trial of the constitution.

FIRST IMPRESSIONS OF MEDICAL PRACTITIONERS

ON SEEING THE PRINCIPLES OF HYDROPATHY CARRIED OUT AT OUR ESTABLISHMENT.

I HAVE had medical practitioners, and amongst them several physicians, who have come, without prejudice, to see for themselves upon what principles Hydropathic practitioners profess to act. Within a short period two physicians and several surgeons have been successfully treated at my Establishment for ill health they had not been able to cure by their own prescriptions.

The medical profession generally look with contempt on Hydropathy, believing we have no sound principles for the basis of our action, such as they suppose they have in their counter-irritants, setons, issues, mercurial ointment, their soothing narcotics, stimulating quinine, steel mixtures, colchicum, for causing changes in the components of the blood and the tissue; they have little idea we can overcome the most obstinate and long-standing constipation of the bowels by our simple means. They cannot believe mere water can have either the powerful or curative effects of these severer applications or produce such quick results. In all these points they are in error. We can lower the pulse and subdue inflammation far more rapidly than they can by any of their applications, *and without lowering the vitality of the body.* Surgeons are well aware of the vital importance of procuring immediate perspiration in many cases; now, by a fomenting pack, or cold wet sheet envelope, or spirit lamp, *we never fail to produce it at once.* Their James's powder, &c., have to enter the blood, and go through an elaborate process before they can have effect: the effect is uncertain, and depends a good deal on the power of the stomach to act. We leave the stomach at rest, and, by drawing the secretions through the skin, relieve it, instead of burdening it with what the surgeon knows is likely to cause nausea, and which is very often the result: the medicine then, instead of being beneficial, is highly injurious.

When medical men come without prejudice to examine into our mode of practice they soon see we have a basis and principle to act upon, and that we do not give this or that bath or wash over, hit or miss, to produce some result, as likely to do harm as good. No! Every man of good principle will take care he has a clear conviction in his own mind, and the truth of it confirmed by known results, before he will practice. If he has no clear, defined principles upon which he can act with confidence, then he is guilty of a great social sin in acting at all.

My medical visitors have often questioned me on the principles I act upon. I gladly answer their questions, that they may judge for themselves. I never shun questions, having nothing to conceal. If a case comes before me that I cannot see my way in, I am ready and feel bound, in principle, to acknowledge it; but these are rare indeed. The grand starting-point is to ascertain *what the life of the organic body consists of and where it is.* Every medically-educated man will say at once it is not in the blood, it is not in the muscle, or in the bones, or

in the matter of the brain, nor in any organic matter of the body; but it is in the vis vitæ, the power of life developed in the nervous system. Cut certain nerves, and the gastric juice will no longer be secreted to dissolve the food. Lower the vitality of the organic nerves of the stomach, and the healthy assimilation of its contents is stopped. The same by the liver, it is no longer able to draw impurities out of the blood, or manufacture its saccharine matter and red corpuscles. Destroy those nerves, or lower their vitality, and the vital power that holds all in order and gives life is wanting; and so, as I hereafter remark, the nervous fluid, or electricity, or whatever it may be designated, is the life of the body. Without it the substance of the body soon dissolves and decays; with it in full power, all is life and vigour. Now, when we have disease to contend with in whatever degree, this vital power is under par; our aim is to raise it, and that can only be accomplished through the means of the stomach and the blood. No practitioner can cure any ailment, or any wound, or any disease, but by making better blood, and better blood cannot be made but by the influence of these nerves of nutrition. Now, by applying as we do to the surface of the body, we set the most powerful apparatus for purification at work in the whole frame. The skin, with its seven to eight millions of pores, and its miles of corkscrew sebaceous and sudorific glands—we purify through these, and thus relieve the frame of morbid matter which is oppressing the delicate organic nerves; we take away quickly the offensive matter which is sickening the whole frame. The Allopaths, to accomplish this, must put stuff into the stomach they know is an outrage upon its structure and functions. They have to trust to its bearing this trial in order to reach other organs or parts diseased; they give opiates to give sleep and allay pain; they dare not leave the patient without a medicine to endeavour to rouse the nerves they have partly paralysed. Thus in the physician's prescriptions, pil. hydrarg. is always associated with opiates, one to counteract the mischief the other causes, and for this end the doctor always gives them together.

The blue pill over night, which so lowers the power of the nerves, and stimulates the liver to make every effort to expel it again, is followed next morning by a black draught, to whip the poor bowels to expel their contents, without any consideration of their structure and natural office; and so it is with setons, blisters, and issues, and the rest of the inventions for forcing nature to do what the doctor wishes, but in which the poor patient always comes off a loser, present or future. All is war against the frame and its functions. All our treatment, on the contrary, is immediately comforting to the body, with the exception of mustard plasters, and those never produce any evil results after. We produce counter-irritation by our fomentations, our bandages, and our hand-rubbing. The bandages and fomentations comfort and soothe the nerves; the wet body bandages determine blood to any part affected, to give life and action, and so by all our appliances. This system must succeed eventually, because it is founded on principles of reason and truth, which Allopathy is not, by the showing of its own professors.

The organ of the Allopathists, the *Lancet*, of 19th Sept. 1857, says, "It is indisputable that the records of legitimate medicine, so far as treatment is concerned, contain such a heterogeneous assemblage of different and often conflicting views, as to give rise, in some quarters, to the conclusion, which is not unnatural, that the principles of medicine are really unsettled, and that the art itself is purely an arbitrary one, depending on the caprice of the practitioner." There are numberless works defending some new theory of medicine, yet Sir John Forbes, M.D., is compelled to write, "Things have arrived at such a pitch, they cannot be worse: they must mend or end."

Hooper, in his Medical Lexicon, a work of standard authority, repeatedly contradicts his own stated principles. He says, whatever lowers the vital power of the organic nervous system, or, in other words, prevents the due supply of nervous fluid descending from the brain, tends to paralysis: yet as will be seen by

my quotation further on, he prescribes bleeding, calomel, blistering, &c., in cases of paralysis, trying to cure by aggravating the mischief already caused by the lowered vitality of these nerves!. I have recently shown some cases of crisis to a surgeon; one was a case of congested liver of long standing, the right side weak, and the knee, and especially the leg below, cold. This was caused by the obstructed venous circulation from the extremities. For many years this patient had been under Allopathic treatment without any material relief, and latterly was decidedly worse, which made him lose confidence in his doctor's prescriptions; he came to me to try Hydropathy. By application to the skin we soon got free perspiration. Then by our fomentations to the liver and bowels, and our warm bandages, we soon set the stomach, liver, and bowels to work healthily. Now, our object was to draw the morbid matter in the liver and the other viscera away, but not by purging the bowels. We got a good deal through the skin, but this was not sufficient to cleanse the system. Nature had pointed out another place for effectual relief in the lame leg, and here we followed her hint by wet and dry bandages, and by steaming and hot mustard leg baths, which shortly brought out a crisis, and laid the patient up in bed with legs apparently highly inflamed and swollen, discharging fetid matter. The appetite was little, under this disturbance of the frame, and consequently apparent sinking. Our surgeon was alarmed with the case, and said if it was his he should have little hope of the man's life, and, moreover, would at once give generous diet and some stimulants. I have named this case to illustrate the difference of our practice. I replied to the doctor, I was quite certain the patient would not only survive, but would become entirely sound in every part of his frame. We let nature work her own way, with a little assistance to cool any feverish feelings; stopped all animal food, gave only water, or weak black tea to drink: and when nature had had time to perform her work the patient became perfectly well, and has enjoyed excellent health ever since, now several years ago. I never knew this natural crisis do anything but good. The many deaths of apparently stout persons we hear of from inflammation, or fever, is owing to the inefficiency of any Allopathic means to throw off inflammation or morbid matter on to the non-vital parts, or to the surface of the body. Purgatives and blistering, &c., only further lower the nervous vitality, and tonics only stimulate to cause further loss of power by reaction. The mischief is sometimes warded off, but always at the expense of the constitution. The seeds of disease can never be eradicated but in nature's own way, and that must be done without violence to the frame and only by increasing the nutritive powers (see Dr. Chambers, page 227).

While saying so much on the evil effects of the Allopathic practice, I do not denounce its practitioners as men destitute of good principle, intelligence, or philanthropy. I wish to point to the mischief caused by adhering to a code of practice which modern discoveries have shown has no foundation in truth. No class of men perform more services gratuitously than medical men. I do not know any who have to earn a living by their labour who do so much.

The inconsistencies of some cold-water doctors tend greatly to prejudice medical men against the system: medical men well know that in cases of great debility, and in consumptive cases especially, exciting the skin, by frequent ablutions, will stimulate for a time, but the reaction leaving the body prostrate. In all inflammatory or very weak subjects, we are very cautious how we apply stimulating treatment or much ablution to the whole body; indeed, we often get patients far on in recovery before we give them what would be considered a bath, and a whole immersion, never.

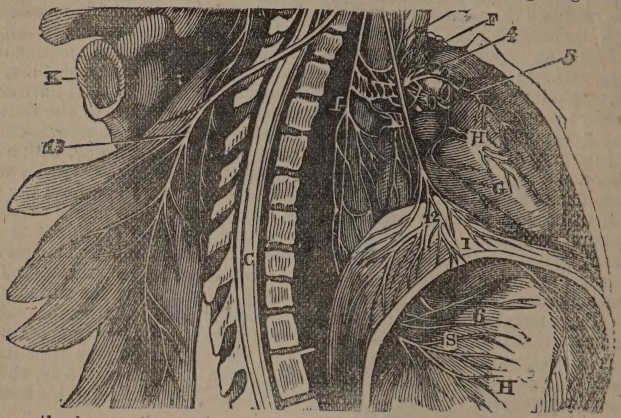
Time will prove the truth of the Hydropathic principles of practice; and I cannot doubt educated and scientific men, as the medical profession generally are, will adopt true principles, if the public will allow them to break into their superstitious belief in the efficacy of physic, blistering, &c.

JOHN SMEDLEY.

Matlock Bank,
July 22, 1858.

HEART DISEASE

JUST as the false system of treating inflammation by lowering treatment, and just as the false practice of purging the bowels and kidneys because they are in too weak a state to act naturally, so poor humanity is destroyed, right and left, with far more certain effect than the new needle-gun; for whereas the needle gun and rifled cannon are only now and then brought into killing use, the war carried on by the destructive purgatives, blisters, setons, leeches, lancets, lotions, scarifying, drugs of a thousand kinds and of the most powerfully poisonous nature, produced by Mother Earth, are being administered day and night, the year round, to all ages and conditions, without any truce to the poor frame Men of the most active and acute minds, as well as the weak and nervous, male and female, send for a doctor, and unhesitatingly swallow prussic acid, podophyllum, arsenic, calomel, strychnine, &c. They allow the doctor to draw blood away when nature is obliged to substitute water to keep the veins full, or the heart would not act. They allow incisions into tumours and boils, or medicine given to suppress boils, which tumours and boils are only efforts of nature to expel morbid matter, which we see, if left to the simple poulticing, steaming, &c., cures, but when cut, results often in death or establishing a cause of death. They allow, in short, such a variety of tortures and outrages against God's



structure, the human frame, that it is impossible to enumerate; and besides, new modes of torturing the body are being constantly invented: yet mankind in general, and few even of the reflecting class, will give the subject serious attention, and judge for themselves, and suffer the consequences accordingly. An eminent manufacturer, aged about fifty-eight, who has made an immense fortune, and has a world-wide fame for talent, has lately built a house, at a cost of above £100,000, is now in failing health; he has lost all power of enjoyment, and every day his remaining strength is being undermined, and his life made miserable, by first one and then another random administration of drugs or diet. The practice will kill him, with as much certainty as such treatment destroys vermin, for which purpose many of the very same prescriptions are used. The above cut is from Sir Charles Bell's great work, and shows the near proximity of the stomach to the heart. The cut shows the dividing membrane, the diaphragm (I), which separates the contents of the chest from those of the abdomen; it shows the comparative size of the stomach (H), when ordinarily filled with food, and just above the heart is shown (G). Now when the stomach is filled with food, and, from weakness of the vitality in the solar plexus of nerves at the pit and embracing the stomach, the contents become acid, fermentation takes place, and wind is generated. This, of course, distends the stomach, and interferes with the vibratory action of the heart, causing palpitation, intermittent pulse, pain, and faintness; this is treated by the doctor as disease of the heart, when in fact there is not the least disease or derangement of the organ. Opiates, digitails, and blisters are applied: the opiates farther weaken the stomach, and aggravate the primary cause of the uneasiness,

and so the doctors go on until real organic disease is produced. Overloading the stomach has the same effect in causing palpitation and pain, and in both instances the remedy is obvious—care in diet, and getting up more natural vitality of the stomach by natural means, and not by the means of stimulants and physic.

The causes of dropsy, brain fever, skin disease, spinal disease, cancer, varicose veins, and other ailments of the human body generally considered of such a mysterious nature, and requiring such an extensive knowledge of anatomy and physiology, that only persons said to be specially educated for the medical profession can be supposed to have any knowledge of them, is a delusion; leading mankind in general to give up the attempt to understand the subject. The causes, like all Nature's causes and action, are in reality simple, and can be easily understood. I enter fully into these subjects in my PRACTICAL HYDROPATHY; and without pretending to any new discovery whatever, I give from the works of the greatest anatomists and physiologists their explanations and reasons.

For instance, how mysterious it appears that the blood passing through the body with great rapidity in channels with several coats, preventing the blood from ever coming in actual contact with real flesh or muscle, bone, &c. &c., yet the body grows, is nourished, and maintained by nothing but the blood. Sir Charles Bell's discovery of the organic nerves and their use, many years ago, gives a clear and simple explanation thereof. The network of organic nerves spread through the body, containing a natural magnetic power, attracts nourishment from the blood, as the blood passes rapidly in contact with these nerves, and by no other means but this attraction can the blood be applied to the body. For want of the knowledge of this simple fact, mankind allow themselves to be victims of an antiquated system which was practised when such discoveries as Sir Charles Bell's of the nervous system, of Budd's of the liver, and of Graham's of the kidneys, &c. &c., show the same to be diametrically opposed to the functions and structure of the body; and what is most strange is, that medical practitioners have not changed their ancient mode of treatment in accordance with these discoveries; but it is an undeniable patent fact that they have not done so, for they destroy the organic nerves by caustic just now as ever; and the destruction of these nerves prevents the blood nourishing the part, and the effect extends through the system till the patient is destroyed. I have had bitter and painful experience in a member of my own family done to a painful death by this process; and only last year a friend was so destroyed by having the inside of his throat causticked.

It should never be overlooked that the power of life, and the powers of the body to apply and receive nourishment from food, resides in the vitality, electricity, magnetism, or whatever it may be termed, of the organic nerves—this is the cause of life: when deficient, a person is an invalid or diseased; and when absent, dead.

Dropsy is of two kinds: dropsy of the serous membranes—as the lining of the chest, the pericardium enveloping the heart, the covering of the bowels, the brain, &c., and simply means that the serous circulation is too weak to perform its functions, hereby causing an accumulation of the serum commonly called water. Now, instead of boring a hole into the part, or putting in setons, to draw the water off, we, by invigorating the circulation by natural means, get the serous absorbents to act, and take away the excess of serum; and in this way we have a great number of cases of persons recovering who had by the doctors been given up to die. General dropsy results mostly from weakness of the lymphatic circulation; and in these cases we have seen hundreds easily restored to health by sound physiological remedies. The space in this work will not allow of my going more at length into these subjects, and I only add a parting injunction which concerns every one's existence, that is, to think, reason, and act for yourselves, and not give up your reason and bodies to be operated and experimented upon by those commonly called the faculty, persons who in many cases seem to want the true faculty of discernment so really essential to the profession.

CAUSES OF THE WEAK ACTION OF THE HUMAN MACHINE, AND CONSEQUENT ILL-HEALTH, DISEASE, AND DEATH.

THE highly, so-called, scientific writings on the human body are couched in language so much above the comprehension of the public in general, that they give up the attempt to reason, and form their own opinions on this all-important subject; when, in fact, many, or indeed, with few exceptions, all the causes of ill-health, suffering, and disease are easily traceable. For instance, how much more illness and deaths there are in the winter season in this country than in the fine and genial weather of midsummer; and especially more in the beginning of the year, and into spring.

Persons in summer are not confined in-doors, with the necessity of fires, gas, or other lights, which consume so much of the oxygen in the air; nor are they exposed to the depressing influence of cold, not only on the surface of the body; but in winter they inspire cold air, to expire it in a heated state. This heat imparted to the air we respire is only produced by combustion of food in the body; and the power to keep up the supply of heat to perform this function depends on the powers of digestion; and when those powers are deficient, the vital heat to work the machine is reduced, and consequently inflammation (which is only want of vital power to propel the blood), fever, and congestion of various parts, disease, or death ensue, all owing to the want of that vital power, or the patient is left in a state of general ill-health and nervousness.

The prescriptions doctors give, as remedies to meet these difficulties, are onics, stimulants, &c., combined with what they term alteratives, which purge and lower the vital heat immensely; and then, when the patient still complains, they recommend good living, when the powers of the stomach are become too weak to take a fair quantity of ordinary diet. Then, as this is against Nature's powers, and evidently against common sense, they torture the body by experimenting with drugs of unknown specific action till Nature succumbs.

As soon as autumn comes on in cold climates, the dress should be accommodated to the change of temperature, and persons should not trust to close rooms and fire to preserve the vital heat of the body; and in winter, when engaged in any other pursuit than out-door employment, and consequently take in a less quantity of oxygen from the air to consume the carbon, they should be doubly careful in diet than in genial, fine weather. Such persons should take less, because the body has not the power to consume the fuel supplied in the shape of food.

From want of observation of Nature's simple laws and action, more food is taken with decreased power of assimilation, and with consequent bad effect. Good clothing; not superfine broadcloth and thick great-coats, which, when thrown off, cause such a sudden change; but such clothing as, when the outer garments necessary on going out of doors do not, when cast off, in coming in-doors, make too great a change; and still, at the same time, avoiding hot rooms, and what the doctors term good living and stimulants; but taking out-door exercise as much as practicable, are the conditions of health in the winter and our cold springs. I find Maw's respirator a great preservative of vital heat, and I use it on going out in all states of the weather with impunity. It can be thrown aside any time, and is never injurious. Weak or aged persons should, when practicable, winter in the south of England, or abroad. Devonshire and the southern coast enable persons to be in the open air when in the midland and northern counties they are cooped up in warm rooms, with fires and gas. At the time I write this, some I advised to winter there are in good health they have not experienced for many years previously in winter

THE INTRODUCTORY ADDRESSES AT THE MEDICAL SCHOOLS.

(*From the "Pall Mall Gazette," October* 8, 1868.)

THE introductory addresses which mark the commencement of the winter sessions at the different medical schools have just been delivered, probably not without a feeling of relief alike to those who have had to prepare them and those who are required to listen to them. What purpose they are supposed to serve, whether any definite result is even hoped for by their aid, and if so, whether it is even approximately reached, is a point which admits of a good deal of argument. The Female Medical Society was the first to commence operations, and the lecture was not without spirit and point, owing perhaps to several obvious reasons. This society is young, it has a cause to make good, a success to achieve, and with only one branch of medical study to pursue the method of doing so may well be simple and direct. But any one who has taken the trouble to read the others can hardly fail to be struck by the tone of doubt and despondency which pervades them, and the vague and aimless fashion in which sundry bits of good advice are proffered. What is of a practical kind seems to the lecturers themselves hardly practicable, and what can and must be done is demonstrated to be exactly what is useless when effected. We doubt exceedingly whether any of the discourses generally delivered are calculated to make a lasting impression of one kind or another on the pupils assembled, when we consider the age, status, and ordinary capacity of the young men thus addressed; and if that be so, time and labour are wasted which might be much better employed. Such lectures should be brief and condensed, as being intended to be remembered; plain, so as not to be misunderstood; practical and possible in the advice which they tender; thoroughly significant and informed, or they arouse a just contempt; and vigorous and hopeful, or they fail to yield either inspiration or support. They ought to set forth clearly the object in view, and the easiest and best method of attaining it from first to last, and they should give a sharply-defined sketch of what has been recently discovered or ascertained, and of what is valueless and exploded in the various branches of medicine, so far as such matters bear upon the studies of either the younger or elder students. But instead of this, with few exceptions, what do we actually find? The young men are warned that too much classics and mathematics will dull their observing powers; that French and German are more useful than Latin and Greek; that medicine is not a science at all but an art, in which empiricism and experience outstrip knowledge. "The examinations of some of the licensing bodies are strained to the highest point of tension, and thus defeat their own object:" so that the cultivation of practical manual dexterity and bedside skill is neglected for the sake of cram. Men of excellent judgment and sterling stuff cut a comparatively indifferent figure before the examining boards by the side of these "overstuffed and ready to burst receptacles of scholastic lore." These last obtain their highest point before the examiners, after which they steadily deteriorate. The students are therefore earnestly implored not to cram or grind, though they are assured in the same breath that without cramming and grinding they are certain to be delayed in their progress, and to make a poor impression on the judges appointed to estimate the value of their work.

OF PREVENTIBLE DISEASES 70,000 DIE ANNUALLY.

(*From the "Athenæum," August* 29, 1868.)

UNDER the term Physiology the older writers embraced the study of the external world; but gradually in modern times this term has been employed to express the science of the functions of living bodies. It is thus applied to the

study of the laws of life in both plants and animals. It does not include anatomy, nor the study of the forms and relations of organic beings, which have other names given them; and in order to avoid using these long terms it has been proposed to bring all departments of the knowledge of plants and animals under one term, Biology. At the same time, for the present we must be content with the term Physiology to express our knowledge of the functions of living beings. Although it might have been expected that a knowledge of the functions of the living body would be at once seized upon by the general public and appropriated to its particular use, it is perhaps of all the natural sciences that which is least diffused amongst the people. The science of human physiology has been developed by the researches of medical men, and scarcely a fact in the whole range of the science has been contributed from outside that remarkably well-educated body of men. And yet, perhaps, there is no science, no body of facts in which all men—every man, woman, and child that lives and breathes—are so deeply interested in as those of human physiology. Why is it so neglected in our schools, in our colleges, everywhere outside the medical profession, is somewhat difficult to understand. There is no product of life without life, and the way to maintain this in integrity is taught by the science of physiology.

"Preventible diseases" are now the common topics of newspaper gossip. The annual deaths of England are about 300,000. Of this at least a fourth is made up of preventible diseases. What does this really mean? Why, if that word *preventible* is not sheer cant, got up by such men as Chadwick, Farr, Rumsey, and others, to frighten people, it means that 70,000 people die every year in England from ignorance of the laws of life. This, then, is the case made for physiology as an elementary branch of education. Every one wishes to have good health and to live as long as possible; yet the very knowledge by which life and health are secured is ignored in every system of general education in the kingdom. The prophet in our day might exclaim as of old, "My people perish, and there is none to consider." It is true that in order to meet the pressing necessity of doing something, whilst disease and death are staring us in the face, we have organised Sanitary Associations and appointed Medical Officers of Health, and passed special laws to meet special emergencies; yet all these fail to enlighten the ignorance of the people. The disease gone, the fear of death removed, the people lapse again into their old habits for want of any knowledge or conviction of the cause of disease and death. Nor does this apply only to poor people. In proportion to their necessities, there is as much neglect of the laws of life amongst the rich as the poor. The small amount of light that is let into the mind by the most refined education of the present day is seen in the fact, that the most highly educated die of preventible diseases almost in the same proportion as the uneducated poor.

We do not mean to say that physiology should be introduced into schools as a means of training or as an *instrument* of education; but we say, as a source of *information*, we think it ought to be introduced into every school. It may be made at least as interesting to children as geography, history, or fiction; and the foundation would thus be laid for receiving those stern lessons of the laws of life which are broken with impunity.

SOCIAL SCIENCE MEETING, NORWICH, AUGUST, 1868.

DEPARTMENT OF PHYSIOLOGY.

"Report on the Action of Mercury on the Secretion of the Bile," by Professor Bennett.—Professor Bennett read the Report of the Edinburgh Committee on the action of mercurials on the liver. This committee comprised amongst its members Professors Christison, Maclagan, and Bennett, and Drs. Gamgee,

Rutherford, and Fraser. The object of the experimental investigation which they undertook was to determine whether the different preparations of mercury exert any marked influence in increasing or diminishing the secretion of bile. To determine the point the Committee were obliged to make observations on dogs in which biliary fistulæ were established. These enabled the whole of the bile secreted by the dog to be collected, weighed, and analysed both before and after the administration of mercury. The experiments performed were of an elaborate character, and led the committee to the conclusion that, when given in large or in small doses, mercurial preparations are without effect upon the secretion of bile until the dose has actually become poisonous, when a considerable falling off is noted. That the dog was suited to such experiments was shown by the fact that mercurial preparations exert substantially the same action on the dog as on man.

An animated debate followed the paper, in which Mr. Flower, Dr. Richardson, Dr. Crisp, Dr. Inman, Professor Gross, Dr. Gamgee, and others took part. Dr. Richardson and the whole of the speakers commended in very high terms the labours of the Committee, and suggested that, as they had succeeded in showing that mercurials do not exercise any action on the secretion of bile, they should now study its influence upon the other intestinal secretions, and notably on the pancreatic juice, which he thought might be probably increased. Dr. Crisp objected to the validity of experiments performed on the dog, and suggested the advisability of using the pig instead; whilst Dr. Gross seemed to consider that experiments on man could alone be useful in determining the action of drugs. Dr. Gamgee discussed at length the value of experiments on the lower animals as a means of furnishing us with knowledge with regard to the physiological and therapeutical action of drugs, and asserted that, when rigidly interpreted, these afforded perhaps the most valuable information at our disposal. He pointed out that all the proof which could be obtained by experiments on lower animals was afforded by the thorough set of observations which had been carried out on the dog, and he specially showed the inapplicability of the pig for the purposes of such inquiries, seeing that the presence of hyocholic acid in the bile of this animal points to a radical modification in the lower functions in its case. Dr. Gamgee also insisted that we should not attach an undue influence to the bile—a secretion which he considered represented only an infinitesimal portion of the work done by the liver, and which merely contained the products of those great chemical changes which go on in the course of the formation of glycogen.

IS MEDICINE A SCIENCE?

(*Extract from the "Pall Mall Gazette," July* 17, 1868.)

A REMARKABLE lecture just delivered by Mr. Le Gros Clark before the council and other members of the Royal College of Surgeons, forcibly recalls certain reflections which must have suggested themselves to many persons whose fortune or misfortune it has been to come much into the hands of doctors. Those reflections are mainly to the effect that, except in very simple and obvious cases of disease, not one doctor in a dozen seems to be aware of the difficulty of getting at the true nature of his patient's complaint. Whether he is a physician or only a general practitioner, the typical "medical man" seems to be in possession only of one brief set of routine questions, directed to ascertain the presence or the absence of a set of symptoms so common and so obvious as to be familiar to every non-professional observer of ordinary intelligence. As to any recognition of the endless variety of individual complications which give to each separate case its own special character, the average doctor seems to be entirely ignorant of the existence of such mysteries. He has, in other words, no scien-

tific knowledge of the laws which affect the action of physical life, whether in health or in disease. He views a patient simply as a bundle of detached phenomena; and as soon as he notices some three or four of the phenomena with which he has become familiar in the course of his studies, he assumes that the "case" comes under such and such a heading, and proceeds to "exhibit" the orthodox remedies, or to perform the orthodox operation. Considering the ideas current among clergymen, lawyers, soldiers, and sailors, as to the difficulties which surround the subjects on which they profess to instruct and guide the non-professional outsider, it is satisfactory to observe how rapidly the conviction of their own profound ignorance has gained upon the doctors of this generation; and then to listen to all the best doctors of the land confessing their own and their forefathers' ignorance. It is edifying and refreshing to hear a gentleman, who is surgeon at St. Thomas's Hospital, examiner in surgery in the University of London, and we know not what else besides, confessing to a sympathising professional audience that the difficulties of the profession are immense, and that the only becoming attitude of the philosophic doctor is that of a child studying the great secrets of nature, and hoping that, as ages go by, she will reveal herself more and more fully to those who approach her with the humility and the patience to which alone she confides the solution of her enigmas.

THE FATAL ABSURDITY OF DRUG MEDICATION!

J. Burns, 1, Wellington Road, Camberwell, London.

Sir John Forbes, late Court Physician to the Queen, and the distinguished editor of the *British and Foreign Medical Review*, thus records his opinion of drug medication, the result of the *experience* of a professional life: "Firstly,—That in a large proportion of the cases treated by allopathic physicians the disease is cured by nature, and not by them. Secondly,—That in a lesser, but still not a small proportion, the disease is cured by nature in *spite* of them; in other words, their interference opposing instead of assisting the cure. And, Thirdly,—That, consequently, in a considerable proportion of diseases, it would fare as well or *better* with patients, if all remedies, especially drugs, were abandoned;" and he emphatically adds, "Things (*i.e.*, the state of physic) have come to such a pass that they must either mend or *end*." *

"The science of medicine is *founded* on conjecture, and *improved* by murder."—*Sir Astley Cooper.*

"There is scarcely a more dishonest trade imaginable than medicine in its present state. The monarch who would entirely interdict the practice of medicine would deserve to be placed by the side of the most illustrious characters who have ever conferred benefits on mankind."—*Dr. Forth.*

"The whole art of physic might be written on a single sheet of paper. When I commenced practice, I had twenty remedies for every disease; but before I got through, I found twenty diseases for which I had no remedy."—*Dr. Radcliffe.*

"The great success of quacks in England has been altogether owing to the *real quackery* of the regular physicians."—*Adam Smith.*

"The medical practice of our day is, at the best, a most *uncertain* and unsatisfactory system; it has *neither philosophy nor common sense* to commend it to confidence."—*Professor Evans, Fellow of the Royal College, London.*

"I am incessantly led to make an apology for the instability of the theories and practice of physic. Those physicians generally become the most eminent who have most thoroughly emancipated themselves from the tyranny of the

* For this honest expression of opinion, Sir John was deprived of his position as editor of the above Review.

schools of medicine. Dissections daily convince us of our *ignorance of disease*, and cause us to blush at our prescriptions. What *mischiefs* have we not done under the belief of *false facts* and *false theories!* We have assisted in *multiplying diseases:* we have done more: we have *increased their fatality.*"—*Benjamin Rush, M.D., formerly Professor in the first Medical College in Philadelphia.*

"Assuredly the uncertain and most unsatisfactory art that we call medical science, is *no science at all*, but a jumble of inconsistent opinions; of conclusions hastily and often incorrectly drawn; of facts misunderstood or perverted; of comparisons without analogy, of hypotheses without reason, and theories not only useless, but *dangerous.*"—*Dublin Medical Journal.*

"Let us no longer wonder at the lamentable want of success which marks our practice, when there is scarcely a sound physiological principle among us. I hesitate not to declare, no matter how sorely I shall wound our vanity, that *so gross is our ignorance* of the real nature of the physiological disorder called disease, that it would, perhaps, be better to do nothing, and resign the complaint into the hands of nature, than to act, as we are frequently compelled to do, without knowing the why and the wherefore of our conduct, at the obvious risk of *hastening the end of the Patient.*" In addressing his medical class, he says: "Gentlemen,—Medicine is a great humbug. I know it is called science. Science, indeed! it is nothing like science. Doctors are merely empirics when they are not charlatans. We are as ignorant as men can be. Who knows anything in the world about medicine? Gentlemen, you have done me the honour to come here to attend my lectures, and I must tell you frankly now, in the beginning, that I know nothing in the world about medicine, and I don't know anybody who does know anything about it. . . . . I repeat, nobody knows anything about medicine. . . . . We are collecting facts in the right spirit, and I dare say, in a century or so, the accumulation of facts may enable our successors to form a medical science. But I repeat it to you, there is no such thing as a medical science. Who can tell me how to cure the headache, or the gout, or disease of the heart? Nobody. Oh, you tell me, doctors cure people. I grant you people are cured; but how are they cured? Gentlemen, nature does a great deal; imagination a great deal; doctors—devilish little when they don't do any harm. Let me tell you, gentlemen, what I did when I was physician at the Hôtel Dieu. Some three or four thousand patients passed through my hands every year. I divided the patients into two classes: with one I followed the dispensary and gave the usual medicines, without having the least idea why or wherefore; to the others I gave bread pills and coloured water, without, of course, letting them know anything about it; and occasionally, gentlemen, I would create a third division, to whom I gave nothing whatever. These last would fret a good deal—they would feel that they were neglected—sick people always feel they are neglected, unless they are well drugged "les imbéciles,' and they would irritate themselves until they got really sick, but nature invariably came to the rescue, and *all* the persons in the *third* class got *well.* There was but little mortality amongst those who received the bread pills and coloured water, but the *mortality* was *greatest* among those who were carefully *drugged* according to the *dispensary.*"—*M. Magendie, the celebrated French Physiologist and Pathologist.*

"More infantile subjects are perhaps destroyed by the pestle and mortar than in the ancient Bethlehem fell victims in one day to the Herodian massacre."—*Dr. Reid.*

"We have seen somewhere a quotation from Van Swieten, in which that philosophic physician expresses the result of his wide-spread review of medical practice in the aphorism, 'All that *art* can do is to *weaken* life;' and truly that seems a fair description of the agents which have been handed down to us in the *materia medica.*"—*Editorial observations in the "Medical Mirror," January,* 1867.

"Our actual information or knowledge of disease does not increase in proportion to our experimental practice. Every dose of medicine given is a *blind experiment upon the vitality* of the patient."—*Dr. Bostock, Author of the "History of Medicine."*

"The science of medicine is a *barbarous jargon*, and the effects of our medicines on the human system in the highest degree *uncertain*, except, indeed, that they have *destroyed more lives* than war, pestilence, and famine combined."—*John Mason Good, M.D., F.R.S.; Author of "Book of Nature," "A System of Nosology," "Study of Medicine," &c.*

"The principles of the water-cure treatment are founded in nature and truth. We have in our power a new and most efficacious agent for the alleviation and cure of disease in various forms, and, in proper hands, as safe as it is effectual. I should be no friend to humanity, nor to medical science, if I did not give my testimony in its recommendation."—*Sir Charles Scudamore, M.D., F.R.S.*

Abernethy observes sarcastically: "There has been a great increase of medical men of late years; but, upon my life, diseases have increased in proportion."

"I declare, as my conscientious conviction, founded on long experience and reflection, that if there was not a single physician, surgeon, man-midwife, chemist, apothecary, druggist, nor drug on the face of the earth, there would be *less sickness* and *less mortality* than now prevail."—*James Johnson, M.D., F.R.S., Editor of the "Medico-Chirurgical Review."*

The celebrated Dr. Baillie, who enjoyed perhaps the largest and most fashionable practice that ever fell to the lot of any physician in the world, declared, after forty years' experience, "that he had no faith in physic," and on his deathbed frequently exclaimed, "I wish I could be sure that I have not killed more than I have cured."

The venerable Professor Alexander H. Stevens, M.D., of the New York College of Physicians and Surgeons, in a recent lecture to his medical class, says: "The older physicians grow, the more sceptical they become of the virtues of medicine, and the more they are disposed to trust to the powers of nature." Again: "Notwithstanding all of our boasted improvements, patients suffer as much as they did forty years ago." And again: "The reason medicine has advanced so slowly, is because physicians have studied the writings of their predecessors, instead of nature."

"I may observe that, of the whole number of fatal cases in infancy, a great proportion occur from the inappropriate or undue application of *exhausting remedies.*"—*Dr. Marshall Hall, the distinguished English Physiologist.*

Says Professor C. A. Gilman, M.D., of the same school: "Many of the chronic diseases of adults are caused by the *maltreatment* of infantile diseases." Again: "Blisters nearly always *produce death* when applied to children." Again: "I give mercury to children when I wish to *depress* the powers of life." And again: "The application of opium to the true skin of an infant is very likely to *produce death.*" And yet again: "A single drop of laudanum will often *destroy the life* of an infant." And once more: "Four grains of calomel will often *kill an adult.*" And, finally: "A mild mercurial course, and mildly *cutting a man's throat*, are synonymous terms."

"On no question perhaps have scientific men differed more than on the theory of the action of medicines. Either facts, essentially opposed and incompatible, have been adduced by the disagreeing parties; or, which is nearly as common, the same fact has received two distinct and opposite interpretations."—*Dr. Headland's Prize Essay on the "Action of Medicines on the System."*

Says Professor Alonzo Clark, M.D., of the same school: "From thirty to sixty grains of calomel have been given very young children for croup." Again: "Apoplectic patients, who are *not bled*, have double the chance to

recover that those have who are bled." And again: "Physicians have learned that *more harm than good* has been done by the use of drugs in the treatment of measles, scarlatina, and other self-limited diseases." And yet again: "My experience is, that croup *can't well be cured;* at least, the success of treatment is very doubtful. A different mode of treatment is introduced yearly, to be succeeded by another the next year." Once more: "Ten thousand times ten thousand methods have been tried, *in vain*, to cure diabetes." Still another: "In their zeal to do good, physicians have done much harm. They have *hurried many to the grave* who would have recovered if left to nature." And, finally: "All of our curative agents are poisons; and, as a consequence, *every dose diminishes the patient's vitality.*"

Says Professor H. G. Cox, M.D., of the same school: "There is much truth in the statement of Dr. Hughes Bennett, that blood-letting is *always injurious* and *never necessary*, and I am inclined to think it entirely correct." Again: "Bleeding in pneumonia *doubles the mortality.*" And yet again: "The *fewer remedies* you employ *in any disease*, the *better for your patient.*" And once more: "Mercury is a sheet-anchor, that *moors your patient to the grave.*"

Says Professor B. F. Barker, M.D., of the same school: "The drugs which are administered for the cure of scarlet fever and measles, *kill far more than those diseases do.* I have recently given *no medicine* in their treatment, and have had excellent success." Again: "I have known several ladies become *habitual drunkards*, the primary cause being a taste for stimulants, which was acquired in consequence of alcoholic drink being administered to them as medicine." And again: "I am inclined to think that mercury, given as an aplastic agent, does *far more harm than good.*" And yet again: "I incline to the belief that bleeding is *injurious* and *unnecessary.*" Once more: "There is, I am sorry to say, as much empiricism *in the medical profession* as out of it." And, finally: "Instead of investigating for themselves, medical authors have *copied the errors* of their predecessors, and have thus retarded the progress of medical science, and perpetuated error."

Says Professor J. W. Carson, M.D., of the same school: "It is easy to destroy the life of an infant. This you will find when you enter practice. You will find that a slight scratch of the pen, which dictates a little too much of a remedy, *will snuff out the infant's life;* and when you next visit your patient, you will find that the child which you left cheerful a few hours previously, is *stiff and cold.* Beware, then, how you use your remedies!" Again: "We do not know whether our patients recover because we give medicine, or because nature cures them. Perhaps *bread pills* would cure as many as medicine."

Says Professor E. S. Carr, M.D., of the New York University Medical School: "All drugs are more or less adulterated; and as not more than one physician in a hundred has sufficient knowledge in chemistry to detect impurities, the physician seldom knows just how much of a remedy he is prescribing." Again: "Mercury, when administered in any form, is taken into the circulation, and carried to every tissue of the body. THE EFFECTS OF MERCURY ARE NOT FOR A DAY, BUT FOR ALL TIME. It often lodges in the bones, occasionally causing pain *years after it is administered.* I have often detected metallic mercury in the bones of patients who had been treated with this *subtile poisonous agent.*"

"The water-cure is a *stomachic*, since it invariably increases the appetite An important hydropathic principle is, that almost all its *measures are applied to the surface.* One of the most *formidable difficulties* with which the ordinary physician has to contend is, that nearly all his remedies reach the point to which they are directed *through one channel.* Their only means of relieving certain diseases *is by inundating the stomach and bowels with foreign* and to them *fr quently pernicious* substances."

"It is singular enough that almost all arguments used *against cold* bathing are the strongest theoretical arguments *in its favour*. Dr. Baynard, a most sarcastic writer, gives us the following anecdote:—'Here a demi-brained doctor, of more *note* than *nous*, asked, in the amazed agony of his half understanding, how 'twas possible that an *external application* should affect the bowels, and cure pain within?' 'Why, doctor,' quoth an old woman standing by, 'by the same reason that being wet shod or catching cold from without should give you the gripes and pain within.'"

TO THE EDITOR OF THE "MEDICAL MIRROR."

SIR,—As nothing has tended more to bring the practice of medicine into contempt than the diametrically opposite prescriptions of its various disciples, it is most important for its progress that such discrepancies should be pointed out, and either harmonised together, or the true practice adopted, and the false disowned. With this view I would, with your permission, contrast with high authority what I consider the false and pernicious teaching of Dr. Inman, in an article some months ago in your journal, where he strongly recommends the administration of alcoholic poison to young children, aye, even to infants only weaned. To say nothing of the absurdity and outrage on common sense, involved in the recommendation of a *poison* by way of *benefiting* a human being young or old, I will content myself with quoting the following protests against Dr. Inman's practice, which I, for one, humbly but loudly denounce as monstrous, deadly, and irrational.

POISON.

(*From the "Scientific Review," August* 1, 1868.)

IN the ordinary acceptation of the word a poison is any substance which taken in *moderate* quantities, either kills or proves exceedingly injurious to health. Some poisons, like prussic acid or strychnine, strike at once with amazing rapidity; others, like arsenic, lead, or sulphuric acid, torture their victims for a certain interval of time before death ensues; others again—and these are by far the more numerous—are less energetic in their actions, they cause less acute suffering, and their influence is prolonged often throughout a succession of years. Sometimes, but not always, one dose of poison is not sufficient to produce death, but simply shortens the natural duration of life to a greater or less extent, according to the constitution (vital powers) of the individual, and this curtailing of the natural limits of our existence is, of course very much more considerable when the doses of these milder forms of poison are from time to time renewed.

With regard to their action on the animal economy, some poisons act directly upon the blood, some upon the nervous system — paralysing the muscles like a flash of lightning; others have a specific action on the skin, the tissues in general, the organs of sensation, &c. However, they all resemble each other in this respect, namely, that when absorbed in quantities too small to produce immediate death, they give rise to a series of internal disorders by which both the physical and moral properties of the individual are affected, and to which his organisation eventually succumbs at an early period. Instead, therefore, of enjoying an existence "here below," which extends to some 200 years, like that of Miss Jane Britten, or like that of the Hungarian peasant, Torten, to 185, or even the more curtailed periods allotted to Jenkins, Damme, and Parr, who lived respectively to the ages of 169, 154, and 152 years, we are absolutely "cut off in the bud" at some early period of life, which may vary from fifty to ninety years!

(*The following is the discussion alluded to, page* 32.)

WESTMINSTER HOSPITAL.—INAUGURAL ADDRESS BY DR. ANSTIE, OCTOBER, 1862.—(*From the Lancet.*)

"THE concluding portion of the address was occupied with a slight sketch of the present state of pathology and the tendencies of modern English therapeutics. Great and important changes had taken place of late years in both these branches of medical science, and the late Dr. Todd was eulogised for the conspicuous share which he took in these movements. It was unfair to the memory of that great man to associate his name with any special system of medication; his real merits were to be found in his constant and successful efforts to procure an acknowledgment of the fact that it is Nature herself who performs by far the most important part of the work of cure, while the physician is only her humble servant, who should be always reverently watching her movements, and, if necessary, aiding the efforts which she herself makes. Allusion was made to the further development which these ideas have received at the hand of Dr. Chambers, who has propounded the theory that all disease consists in a deficiency of vital power, and therefore that all true remedies must be such as directly or indirectly aid the work of nutrition. Whatever might be the ultimate verdict on this theory, it was certain that an immense number of facts, both in physiology and pathology, which have latterly become familiar to us, appear to give it a general support. The discovery by Virchow of the similarity between an immense number of morbid products and the lower kinds of healthy tissue, fortified as it is by the recent observation of Rindfleisch that the development of tubercular matter in the brain of the child presents many points of resemblance with that of the so-called connective tissue; the important observations of Kussmaul and Tenner on the production of epileptiform convulsions by the abstraction of arterial blood, and the development which this fact has received at the hands of Dr. Radcliffe, who has demonstrated the superiority of the nutritive treatment of convulsive disease over every other plan,—these and a host of other facts seem to be leading us in the same direction. It is most important, then, for the student to understand that his attitude must be one of vigilant and earnest inquiry into the phenomena of Nature, and searching though respectful investigation of all therapeutical traditions which have come down to us. There must be nothing of the spirit of perverse and insolent scepticism in this; such a spirit is far more likely to be found among the blind adherents of doctrines which they have never had the courage to test."

SHORT CLINICAL LECTURES BY DR. BEALE, PHYSICIAN TO KING'S COLLEGE HOSPITAL.—*See* "MEDICAL JOURNAL," February 21, 1863.

"Recent careful observation has compelled us to doubt if many remedial agents which have been held in the highest repute really exert the influence which was formerly attributed to them; but of the benefit of counter-irritation few practitioners have any doubt. Indeed, until I recently read a lecture of Dr. Chambers's, I thought we were all agreed, not only with respect to the beneficial action of this plan of treatment, but also as to the principle upon which it is enforced. I have always been taught that by counter-irritation we seek to establish an increased action in one tissue or organ, for the purpose of diminishing an increased action which is taking place in another tissue or organ, the due performance of whose function is of great importance to the organism.

"Dr. Chambers, however, tells us—but I think few will agree with him in his statement—that the idea of counter-irritant practice is to substitute one *disease* which is less 'dangerous and painful, or whose disorganising tendencies are but

temporary, for another *disease* which may be dangerous or painful, or which tends to disorganise the body;' and yet the author of the *Renewal of Life* has admitted, as examples of counter-irritation, purgatives to relieve a cold on the chest, and excessive diuresis for dropsical swelling! Are ordinary temporary purgation and excessive diuresis diseases? After stating that it is probable that 'future physiologists may be able to explain in another way the instances which *seem* (!) to favour the system,' he says that 'in the meantime it appears unwise to adopt, as a principle, the estimation of the utility of our drugs by the power they possess of making a sound man ill' (!). Now what does the word 'ill' in this sentence mean? When our bowels act a little more than usual; when we pass four pints of urine instead of two in the twenty-four hours; when we perspire freely; if we apply a turpentine stupe or a mustard poultice to our sound and healthy skin,—do we necessarily become ill?

"The idea of counter-irritation clearly is, not *to establish one disease for another*, but to increase the action of one or more tissues, with the view of reducing the increased action which is already going on in other and more important tissues or organs.

"It seems to me that much of the obscurity which occurs when an attempt is made to account for changes, and to explain various actions, results from the effort to define the *diseased* as distinguished from the *healthy* state. The best plan, therefore, in discussing morbid actions and changes is simply to try to ascertain with accuracy what *is* going on, and contrast it with what physiology teaches us *ought* to go on.

"If we make an attempt to define exactly what is meant by the substantive *disease*, or by the adjective *morbid*, great confusion must result; and for this simple reason, that we cannot separate by any distinct line healthy actions from morbid actions, or the *healthy state* from the *diseased state*. Of course, a small contracted liver or kidney, doing one-tenth of the work healthy organs would do, and exhibiting the most obvious alterations of structure, are diseased. They have, however, not passed suddenly from the healthy to the diseased state but by very insensible gradations, so that, had you seen the organs in an early stage, you would not have been able to point out any differences by which they could certainly have been distinguished from healthy organs, although, had you examined the secretions formed by them, you might have obtained evidence of change in quantity or quality. Up to a certain point, although there may have been excessive or deficient action, you could not have spoken of the condition as one of disease.

"Nor can we define disease as increased or diminished action—increased or diminished vitality; for in some diseases tissues grow too fast, in others the structures or organs are reproduced too slowly. Disease may consist of an *excess of action*, or there may be *deficient action*. The tissue may live too fast, or it may undergo its changes more slowly than in health. There is in many morbid structures or products a greater activity, a more rapid conversion of pabulum into living matter, than in health. A certain bulk of epithelial or other form of cancer, or of pus, or of the lymph occupying the air-cells of a pneumonic lung, exhibits greater evidence of vital activity than the same bulk of healthy tissue. It grows faster; it appropriates nourishment faster; and this nourishment more quickly becomes converted into tissue, or is transformed into compounds, totally different from those existing in it before its appropriation, far more actively than in a normal tissue. *The conversion of inanimate pabulum into living matter, which in health takes place under certain restrictions, takes place in these instances under restrictions very much diminished.*

"To say, then, that 'disease is not a new excess of action, but a deficiency; not a manifestation of life, but partial death'—is stating that which is opposed to most important facts of general observation, and is strangely at variance with the facts demonstrated by very many observers in the present day.

"Nor can I agree with Dr. Chambers in his statement that 'the business of the physician is directly or indirectly not to take away material, but to add; not to diminish function, but to give it play; not to weaken life, but to renew life.' We very often desire to take away material, as when any organ is the seat of greatly-increased action. We try to get rid of the lymph in an inflamed lung, the matter poured out into the areolar tissue and other tissues in inflammation, or into the joints and fibrous tissues in gout and rheumatism. Not only so, but the blood itself often contains matters which we desire to get rid of; so that we really often have to take away material; and if we could but diminish the supply of blood to many organs at the right moment, and for the right time, we might possibly prevent a diseased action from being developed. (*But Dr. Beale knows this is impossible.*)

"So, again, it seems to me that we really do often desire to diminish function. When an organ is deranged, is it not a principle established by experience, and does it not accord with common sense, to try to *diminish its action*, and make some other organ do its work for the time? (*When an organ is struggling to retain or restore its natural action, Dr. Beale would lower its power and destroy the disease and life also. Alas! how often this is done.*)

"The last advice given to the physician, 'not to weaken life,' seems to me to require explanation; for surely, if we could 'weaken the life' of a cancer, it would be just what we desire; and if we could but prevent it from *renewing its life*, we should be doing more than medicine dares at present to hope ever to achieve.

"I have drawn your attention to these points, because it seems to me that the dogmas insisted upon by my friend are opposed to the principles of sound physiology, and to the teachings of the bedside, while they are not supported by any new observations of his own; and because the very positive exposition of his peculiar views in his first lecture seems to me to demand our attention; and I therefore take this opportunity of discussing some of the first principles upon which our science is based.

"I cannot help thinking that Dr. Chambers has assailed some notions which are very much nearer the truth than the substitutes he proposes; and I do not think that the statement that 'disease is a deficiency of action and partial death,' as a general principle, can be received or sustained. It is also incorrect to talk of 'life-giving articles.' Nothing gives life save that which has life; and this is, at any rate, a sound truth, from which all our speculations upon the essential nature of healthy and morbid changes in living structures must start."

How would Dr. Beale's theory of "weakening life," as he terms his practice, apply to the following? The weakening system has been tried upon this case, and here is the result:—

"DEAR SIR,

"I am a working man, with a wife and four children, and for the last twenty months I have been a great sufferer. At the beginning I had an inflammation in my right eye, and that has never been right since. Then I had both my legs inflamed, so that I was obliged to sit with them upon a chair. I have suffered very much from nervous debility, feeling, sometimes as I lay in bed, as if the bed was sinking beneath me—such feelings are not strange to me at the present time. Of late my legs have begun to swell again and inflame, a dimness has begun to affect my other eye, and I feel myself to be little worth. Dear sir, if you can give me any advice that you think likely to benefit me, I will gladly pay you for it; or, if you would prefer a personal examination, I shall be obliged to put myself about in order to pay you a visit for that purpose.

"Hoping to hear from you,

"I am, yours respectfully,

"GEO. BROOKE."

ILLUSTRATIONS OF HOSPITAL PRACTICE, "MEDICAL JOURNAL," FEBRUARY 21, 1863.—CASE UNDER CARE OF DR. JAMES RUSSELL, M.D., BIRMINGHAM GENERAL HOSPITAL.

THIS case is a striking illustration of the inefficiency of Dr. Beale's doctrine of "weakening life" by way of cure. Now, such a case, by our foment packs, &c., would have been cured in a week: we have had hundreds similar, and in such acute attacks have never found the least difficulty in conquering the disease in a very short time, and restoring the patient to health without making the body a depository for drugs, or having irreparably injured the nervous system by torture of blister, &c. It is strange that in all the disputes and disagreements of practice by the legal profession, the greatest depurative agent of the body, the skin, rarely, if ever, comes into discussion, and the importance of stimulating the pores of the skin and the capillary circulation to healthy action is seldom named, and this when two pounds of waste is supposed to pass through these pores in twenty-four hours in an ordinary sized man.

"The next case appears one of typhoid pericarditis, remarkable from its mildness as compared with the attendant symptoms, and more so from the singular persistence and recurrence of symptoms allied to typhoid fever on more than one occasion.

"CASE V.—Ann Tibbetts, aged 37, a nurse in the hospital, had never had rheumatic fever; nor was she aware that she inherited any rheumatic tendency. She had been very assiduous in her attendance upon some cases of typhoid fever, and especially upon one of great severity, which was admitted on January 17th, 1862, and was not convalescent until February 8th. On that day, she was taken with shivering, heat of skin, and great depression, together with soreness of throat, without any morbid appearance presenting itself in the interior of the fauces. On the 10th, a sharp eruption of herpes appeared on her lips. The fever did not subside until the 12th, when she was able to sit up for a short time. From that date until the 19th, she walked about the ward, but was very feeble, occasionally shivered, and complained of severe pain between the shoulders, and of tightness across the chest.

"On February 19th, she was very poorly; had sharp cutting pains across the chest, through each breast, and round the shoulders. In the evening she was seen by Dr. Maxwell, from whose notes I have extracted the preceding report. He found her greatly exhausted, and looking very ill. Careful examinations of the chest did not detect any morbid signs in that region, excepting very rapid and irritable action of the heart. The sounds of the heart were perfectly clear.

"She passed a very restless night, and spoke next morning very urgently of the pain she had suffered in the neck and chest, which, however, was somewhat relieved by the application of warm flannels. At 4, an opiate draught procured ease. At 7, Dr. Maxwell, at his visit, detected the physical signs of pericarditis.

"2 P.M. The pulse and respiration were 124 and 32. There was much moaning; the face was very pinched; aspect exceedingly typhoid; tongue very dry and fissured; skin dry. A fine pericardial friction-sound was heard, chiefly with the *diastole* of the heart. When first heard in the morning, it was double, very loud and coarse, and was distinct over the entire cardiac region.

℞ Æther. chlorici ʒij; tincturæ cardamomi comp. ʒss; aquæ ʒviiiss. M. Sumat ʒj 4tis horis.

She was ordered to have six ounces of wine.

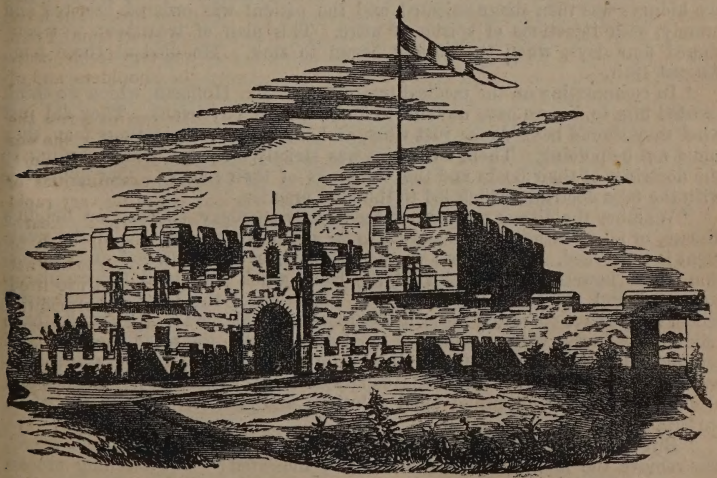
"During the following two days she remained in much the same state. She lay on her back and was very languid. There was no delirium, excepting some confusion during sleep. Pulse 80, labouring, and presenting an interval after every third beat. She complained of some pain in her left shoulder. Her ab-

domen was soft, free from distension and from eruption. There was no diarrhœa. The friction-sound continued to be chiefly *diastolic*, and the cardiac dulness was not extended. The pulmonary signs were normal. She had been ordered half an ounce of brandy every second hour.

"On the 23rd, improvement was decidedly visible. The pulse was 60 to 65, frequently intermitted. The friction-sound was harsh and *systolic*. On the 25th, she desired solid food. On the evening of March 8th the patient suffered from an attack of orthopnœa, with much fluttering of the heart; and on the following day a more severe paroxysm occurred, having the characters of angina pectoris. The systolic friction-sound, which was noted on the 4th to be hardly distinguishable, was again very loud. A blister was applied to the cardiac region. The pain and dyspnœa were relieved by two draughts containing opium and chloric ether. She left on March 30th. The friction-sound was then not quite inaudible; but in June, when she returned, the pericardium was quite silent.

"She continued equal to her duties from the last-mentioned date, though they were at times very laborious. Early in August she went for a holiday to Coventry. Whilst there she again became ill and depressed, and suffered from diarrhœa, sickness, and entire loss of appetite. She returned to take to her bed, but was sent out convalescent on September 24th; but four days afterwards was again received, very feeble, with a running, vibrating pulse.

"She came under my care on the 12th of the month, with all the symptoms of typhoid fever. The symptoms were not alarming, though sufficiently severe; obstinate vomiting was very prominent. No eruption appeared, but diarrhœa was present to a moderate degree. She did not leave her bed until the last week in October, a relapse having been occasioned by premature indulgence of her desire for solid food. From that period her recovery progressed satisfactorily; and at the present time she is actively employed in the hospital, in perfectly good health. There were no symptoms of any cardiac affection during the last illness."



RIBER ENTRANCE LODGE.

The principal house intended to be erected here as an addition to the Hydropathic Establishment not yet built. This Lodge is about 620 feet above the river Derwent, and was built and occupied in four months and a half, February to 1st July, 1863.

HOW STRONG MEN ARE FINISHED BY DR. BEALE'S LEGAL PRACTICE OF LOWERING THE VITAL POWERS OF THE ALREADY EXHAUSTED FRAME.

"AMONG the deaths which have occurred within a few months in this city, quite unnecessarily in our judgment, is that of Michael Hoffman, Esq., late deputy collector of the port of New York. He was universally respected and beloved as a useful citizen and an efficient officer. He was blessed with an iron constitution, was in the prime of life, and died in the forty-first year of his age. A friend has sent us the following statement of his case:—

"Being a high liver, he indulged in late suppers, and thus laid the foundation for a plethoric condition and a tendency to apoplexy. He was taken sick August 12, complaining of a severe headache, and remained at home reclining on a lounge during the day. Dr. Otis was called at five p.m. The doctor sent all of the patient's friends out of the room, and, finding that the patient had lost the use of his right hand so that he could not hold a pen, applied twelve leeches, and promoted the flow of blood as long as possible by the application of warm water to the leech-bites. The patient, it should be remarked, had been subject to these headaches for several years.

"The next day Mr. Hoffman kept about the house until eleven p.m., when he retired to bed. Soon after he had an apoplectic fit. Dr. Ranney was called in and took half a pint of blood from the arm, and left him blue pills to be taken from time to time.

"The next day he was worse, and at one p.m. had convulsions. On this day he was attended by four physicians—Drs. Otis and Ranney, and Professors Clark and Barker. In a consultation a suggestion was made that his disease 'might be something different from what they had supposed it to be.'

"The doctors 'saw in his eye the suspicion of the disease,' &c. The urine was then tested (why not at first?), and found to be acid. Bright's disease of the kidneys was then diagnosticated, and the patient was ordered beef-tea and brandy, with injections of spirits of nitre. This plan of treatment was continued four days, when the patient began to sink. He died at three p.m., August 18th.

"In commenting on the medical treatment of Mr. Hoffman, which we think assisted him to die, we have no fault to find with his physicians. They did just what they should have done; just what, as honest and conscientious men, they could not help doing. Their treatment was strictly orthodox, and according to the doctrines of their books and the teachings of their schools. Our quarrel is with the false doctrines which led to the fatal practice.

"Whether the disease proper was technically apoplexy, epilepsy, or Bright's disease, or all, or either, is immaterial, so far as the right or wrong of the treatment is concerned. The patient was in a condition of obstruction and congestion. The bowels were constipated, the blood thick and viscid, the capillaries congested, and the brain overloaded. A physician of the Hygeio-Therapeutic school would have corrected these mal-conditions in this way. He would have relieved the bowels with an enema of tepid water, drawn the blood *from* the head (not *out* of it), by means of the application of cold wet cloths and a warm foot-bath; he would have relieved the congested liver with the wet girdle, and opened the pores by means of tepid ablutions and gentle friction to the whole surface, &c.

"But the doctors leeched out Mr. Hoffman's blood. How could such a process remove the morbid conditions we have indicated? The bleeding process was repeated and the patient further reduced with blue pills until convulsions were induced. Then a council was had, and the whole plan of treatment reversed. It was discovered that the patient had been treated for the wrong disease. The depletion was changed to stimulation. But if bleeding could not remedy ob-

structions, how was brandy to cure inflammation, or ulceration, or disorganisation of the kidneys? Fortunately for the medical profession, and unfortunately for all the rest of the world, reason and common sense have nothing to do with these matters. Mr. Hoffman was doctored *secundem artem*. He died and was buried and—might have lived if there had not been a single physician on the earth."

ILLUSTRATION OF THE KILLING PRINCIPLES OF PHYSIC,

Bleeding, blisters, setons, &c., which never, under any circumstances, can increase the vital powers of the body; but which inevitably, from the laws of Nature, cause disease and death.—(*From Herald of Health.*)

CASE No. 3.—Wm. L——, from Fowler, N.Y., a man forty years of age, a farmer by occupation, for the past year a soldier, came to the Institute from David's Island Military Hospital, March 7th, 1863. He was a large, robust-looking man when well, and previous to entering the army had enjoyed good health. In March, 1862, after a few weeks of constipation of the bowels, a slight diarrhœa commenced, at first alternating with constipation. In three or four weeks' time it settled into a permanent looseness of the bowels; evacuations occurring from ten to fifteen times in twenty-four hours.

The 1st of June he had typhoid fever, which continued throughout the month. The diarrhœa continued through the fever, and after the fever had left him. He was treated allopathically, going through the whole rounds of stimulation. During the fever his limbs became badly swollen, and a rash appeared over the surface of the body, which the physician called scurvy. When the rash appeared the medicine was changed for acids. The diarrhœa was aggravated by the change, and in three or four days his rash entirely disappeared, but was immediately followed by something worse—paralysis of the lower extremities. There was extreme pain in the muscles of the lower extremities; also in the region of the heart. This continued until September, when the swelling of the extremities returned again. In November he had symptoms of intermittent fever; was dosed freely with quinine and anodynes. This treatment was followed by pain in the back and hips, for which the doctor prescribed a liniment, which put him in the most excruciating agony, and for a time he was completely crazy. He was cupped and blistered on the back and over the heart, without any alleviation of symptoms. He finally ceased to take medicines, and slowly improved, till, in January last, he was transferred to David's Island. He remained under the medical charge of the physicians there till the 1st of March, when he received his discharge, after which he came immediately to our Institute. When he entered he was as helpless as a child. He was completely paralysed in the lower extremities, and had not walked a step in two months. His bowels were still irregular, alternating between constipation and diarrhœa. He was troubled very much at times with piles; also, a continuance of the pain in his back and hips. He had to be carried to his room by two strong men—carried to his baths at first—and was waited upon like a child in dressing and undressing. He stayed with us about nine days. His wife being dangerously sick, he was called home to see her. Before he left he could walk all round the room without crutches, and with them he walked to the North River and back, a distance of over half a mile; and he walked two or three times to Broadway and back. We gave him for treatment, while here, a vapour-bath ten minutes every day, followed by a spray at 85°; the wet sheet-pack for forty minutes, followed by the half-bath at 90°; and, at four o'clock in the afternoon, the hip-bath at 85° for fifteen minutes. He wore the wet girdle at night about the body above the hips. He ate two meals a day, almost entirely of fruit and vegetables. His general health was very much improved; his bowels became regular; his appetite good; and he gained in strength very rapidly.

"Again: Lord Ebury stated in his place in the House of Lords, in the discussion on the Medical Act, 'that they were about to entrust medical practice to a set of men who declared they had no faith in their system. Dr. Bailey, on his death-bed, doubted whether the medicine which he had prescribed had not done more harm than good. Dr. Chambers, in a funeral oration upon Dr. Williams, said, that the deceased had no confidence in medicine; and Sir J. Forbes stated that the present practice of medicine was so entirely unsatisfactory, that he hoped some new school might be set on foot.'

"Dr. James Johnson, in the *Medical Chirurgical Review*, says that it is his conscientious opinion, founded on long observation and reflection, that if there was not a physician or surgeon in the world, there would be less mortality than now prevails. The celebrated Magendie says:—'Let us no longer wonder at the lamentable want of success which marks our practice, when there is *scarcely a sound physiological principle amongst us!*' Frank declares 'that thousands are annually slaughtered in the quiet sick room.' Dr. Paris acknowledges that 'the file of every apothecary would furnish a volume of instances, where the ingredients of the prescriptions are fighting together in the dark.'

"Dr. Bushnan, the editor of the *Medical Times*, calmly tells the medical man to fold his arms and look on, while nature does the work; 'for,' says he, 'the modern triumph of our art (triumph, forsooth!) is more in the happy forbearance exemplified in our negative treatment than in the positive success of any heroic remedy; i.e., look on, gentlemen—do nothing; and take my word for it, you will be infinitely more successful as practitioners than by giving any amount of physic, *secundem artem*.'

"Dr. Pereira, a most distinguished medical writer, agrees in opinion with Sir Gilbert Blaine, 'That in many cases the patients get well *in spite of the means employed;* and sometimes, when the practitioner fancies that he has made a great cure, we may fairly assume the patient to have had a *happy escape*.'

"Still it may be urged, this allopathic system does cure. We see, every day, persons getting well under it. If it does good to them, why should it not suffice for us,—for all? Let us hear what Sir John Forbes, one of her Majesty's physicians, says, on this head, in his *Art and Nature in the Treatment of Disease*:—

"1st.—'That in a large proportion of cases the *disease is cured by nature, and not by them.*

"2nd.—'That in a lesser but still not a small proportion, the *disease is cured by nature in spite of them.*

"3rd.—'That, consequently, in a considerable portion of diseases, it would fare as well or better with patients in the actual condition of the medical art, as now generally practised, if all remedies, at least all *active remedies*, especially DRUGS, were abandoned.

"'We (Sir J. Forbes) repeat our readiness to admit these inferences as just, and to abide by the consequences of their adoption. We believe they are true. We grieve sincerely to believe them to be so; but, so believing, their rejection is no longer in our power; we must receive them as facts, until they are proved not to be so. What, indeed, is the history of medicine but a history of perpetual changes in the opinion and practice of its professors, respecting the very same subjects—the nature and treatment of diseases? Who, amongst us, of any considerable experience, and who has *thought* somewhat as well as *prescribed*, but is ready to admit that in a large proportion of the cases he treats, whether his practice in individual instances be directed by precept and example, by theory, by observation, by experiment, by habit, by accident, or by whatsoever principle of action, he has no *positive proof*, or rather no *proof whatever*, often indeed very little probability, that the remedies administered by him exert any beneficial influence over the disease? We doubt if we should greatly, if at all, exceed the bounds of truth, if we said that the progress of therapeutics (i.e., what to do in order to cure the patient) during all the centuries that have elapsed since the days of Hippocrates, has been less than that which has been achieved in the elementary

sciences of medicine during the last fifty years; in other words, there has been more done in those things which are mere aids in medical knowledge, during the last fifty years, than in therapeutics, or knowing what will cure a disease, in two thousand years. This department of medicine,' adds Dr. Forbes, 'must indeed be regarded as yet in its infancy. It would doubtless be going far beyond the truth to assert that there is no certainty in medical therapeutics; and that *the whole practice of medicine (in as far as this consists in the administration of drugs) is a system of traditionary routine, conventionalism, hap-hazard, and guess-work; but it is not going beyond the truth to assert that* much of it is so.'

"As to the large dose, says a writer in the *Medical Times*:—

"'We could present a rather serious tragedy if we were to collect all the cases of poisoning by huge masses of powerful medicine by the disciples of this physician, and of sanguinary homicide by the invitations of that bold surgeon, *though they may both enjoy high repute.* Could all the consequences from the use of mercury alone be brought together and comprehended in one view, it would be impossible for the human eye to look upon a scene of greater devastation and horror.

"'He who, for an ordinary carse, resigns his patient to mercury, *is a vile enemy of the sick;* and if he is tolerably popular, will in one successful season, have paved the way for the business of life; for he has enough to do *ever after a ward to stop the mercurial breach of the constitution of his dilapidated patients.*'

"Dr. Bell, of Edinburgh, remarks, 'that the favourite mode of administering metallic and other remedies in a concentrated form is contrary to reason and the teaching of Nature; inasmuch as Nature, when preparing a remedy, as in the case of mineral and medicinal springs, invariably presents it in a a state of remarkable dilution or attenuation, such being apparently the most favourable form for its ready absorption. So also, in the case of a medicinal herb, we find it diffused throughout the plant in a state of minute division, instead of occurring in the form of an extract, such as is sedulously prepared and administered, in preference to the state in which it exists in the capillaries of the plant. As to large doses, he observes, 'Take for example, iron. We know that the entire blood of an adult does not contain more than thirty grains of iron, and when this is deficient in disease, what use can there be in giving a large quantity where so little is required? I have repeatedly seen so small a dose as the eighth of a grain of the extract of belladonna taken into the stomach of a young person cause full dilatation of the pupil.' Now, if we consider how extremely minute must be the portion of even this very small dose when circulating through the blood-vessels which comes into contact with the nerves of the iris, we may form some conception of the susceptibility of our frame.'"

It is a great prejudice to suppose that we cannot begin too early our intellectual education. We do begin too early when we choose that period in which Nature is still engaged in the development of bodily strength and organs, and where all her power is required for this purpose. If children are then compelled to sit quietly in a room, and their young minds urged to action, we take from them the noblest part of their strength, which is consumed in the function of thinking; growth is necessarily retarded, the limbs imperfectly developed, the muscles weakened, the digestion becomes bad, scrofula appears, and then ensues a predominance of the nervous system in the whole machine, which exhibits itself during lifetime in nervous diseases, hypochondriasis, &c. If the child is very early disposed to think and to learn, we should, instead of encouraging this tendency, as is usual, rather prevent its being indulged; for such precocity is in itself a disease, or at least an unnatural condition, which is to be avoided. Any unequal development of our faculties is injurious, and it is certain that mental exertions weaken the more as they are unaccompanied by bodily movement. It is also certain that he who between his mental occupations goes through suitable bodily exercises can work mentally much more, and with less injury to his health, than another who neglects his bodily powers. We will not increase the number of quotations in favour of these views.

Gymnastics act on the courage, and produce independence and presence of mind.

No man can possess much courage whose chest is narrow, and whose lungs are not fully developed. Exercise, is, furtherm re, an assistant to the intelligence, inasmuch as it is the most suitable interruption to mental labour, and the best recreation after it. Uninterrupted mental exertion makes the mind heavy, dull, and almost paralysed, and even gives it a false direction. A regard for the common good and a willingness for self-sacrifice are most developed in strong and healthy people, who, from their very bodily condition, are least likely to be dwelling with morbid solicitude upon their own feelings and circumstances.

On the Physical Effects of Snuff-taking.—If tobacco be taken into the nostrils in the form of snuff by those unaccustomed to its use, sneezing takes place, which is a natural process to throw off the offending substance—as when irritated by dust or any other foreign body—for if not thrown out by sneezing, or washed away by the fluid secretion of the nostrils, giddiness and confusion of the head is occasioned, and a feeling of slight intoxication is produced; but by custom this is not the case. By continuing this irritating narcotic, the olfactory nerve, the organ of smelling, which proceeds immediately from the brain, is rendered less sensible, becomes blunted and impaired, and sometimes entirely lost. The schneiderian membrane, on which the nerves of smelling are distributed, becomes thickened and callous, and by degrees the nostrils are clogged up and rendered useless.

Sometimes the secretion of the nostrils becomes diseased, and makes the breath horribly offensive. I have come in contact with the breath of an inveterate snuff-taker who made no complaint of disease, and never did I experience so "villanous" a smell; to me the effluvia of a dissecting-room was preferable. Snuff-taking evidently affects the salivary glands, as the spittle is said to be bitter; "it causes, also, a sort of astriction at the bottom of the nose, which affects the palate, and consequently the speech. This gives the snuff-taker a constant desire of taking more and more, to rid himself of the stoppage."

All the senses are injured, and even the mind itself is sometimes affected by the pernicious habit of snuff-taking. The sense of *Smelling* is injured, by the snuff destroying the olfactory nerves; that of *Tasting*, by its deadening the nervous power of the nostrils and palate; that of *Seeing*, by its stimulating the nerves, inflaming the nasal and lachrymal ducts, and producing diseases of the eye. The *Hearing* is affected, by its inflaming and thickening the eustachian tube, that internal tube of the ear which opens directly behind the back of the nostrils, where the particles of snuff often lodge to an injurious degree; and, by its coming in contact with the brain and the nervous system generally, the memory is impaired, and the sense of *Feeling* becomes much injured.

It has been a matter of dispute which is the most injurious to the human system, the snuffing, chewing, or the smoking of tobacco. To common observers, snuffing might be considered the most harmless, not knowing that by the strong inspirations which are made when snuff is drawn into the nostrils, the powder frequently escapes into the stomach, and produces most pernicious effects. In whatever way tobacco is applied, whether in substance, smoke, or powder, the most serious consequences are that they all act as a baneful narcotic upon the nervous system, producing dyspepsia, or stomach complaints, heartburn, flatulence, diseased secretions, indigestion, and a train of what are called nervous diseases. Whilst writing, I call to mind two ministers, slaves to snuff-taking, miserable dyspeptics; to use the language of one of them, who, when speaking of himself, said, "I am skinny misery." The other, in all probability, fell a victim to the wretched habit. His stomach had lost its power; digestion failed him altogether; his flesh wasted away; constant vomiting occurred, which ended in death.

In concluding these papers on tobacco, in which the injurious effects arising from its use have been shown, the best advice I can give, as a medical man, as a friend, and as a Christian, is to abstain from smoking, snuffing, or chewing. To the young, who have never been addicted to the use of tobacco, I would say, Never touch, taste, nor handle the filthy weed; but rather spend your money in the purchase of useful books, and your time in the cultivation of your mind. To those who use it I would say, abstain from it as from a real evil; no physical injury has ever been known to arise from leaving it off *at once*.

I have long been of opinion that ministers of the Gospel and schoolmasters, who may be considered as leaders and instructors of mankind, should relinquish their offices altogether, if they have not sufficient moral courage to give up the use of tobacco, as their bad example frequently does more injury than their preaching and precepts do good.—*Ipswich Temperance Tracts.*

The following cases show the terrible effects of purgatives, blisters, bleeding, &c. &c. We take in the *Lancet* and the *Medical Journal*, and not a number of those journals comes out but describes cases who have so clearly sunk under the effects of their anti-vital remedies that it is astounding to see such practice persisted in.

"KILLING NO MURDER."—The case which I give below was published by Dr. Bright, in a Paper on Jaundice, in the first volume of Guy's Hospital Reports, and it is a counterpart of the cases quoted by Dr. Alison. It strikingly shows the barbarity of the present authorised mode of treatment by surgeons and physicians. There is no principle of scientific knowledge shown in the treatment of such cases; but, on the contrary, the patients are seen by them sinking under their hands, day by day, as the vital powers of the body are gradually sapped by the bleeding, blisters, and purgatives, which gradually destroy the nervous vitality, until nature kindly takes the poor tortured sufferer out of their hands. The physic in this case first brings on jaundice, by constantly causing nausea, which ipecacuanha is intended to produce. Then when it is found that the liver does not act, to make it do so, the strange plan of further weakening it by drawing fourteen ounces of blood from that region is adopted; this, and the doses of physic, effectually take away all chance of restoration. And it is striking, how, day by day, as such outrages were perpetrated on nature's laws and common sense, first one organ, and then another, ceased to act, until a cruel and agonising death released the poor sufferer.

"CASE 4.—Sarah ——, aged twenty-eight, was admitted into Guy's Hospital, as a surgeon's patient, on the 6th of August. She was a married woman, and had borne two or three children; but had latterly been separated from her husband, and was said to be much addicted to drinking. As she had sores of a very suspicious character, she was ordered to take sarsaparilla three times a day, with five grains of the compound ipecacuanha powder, and of the Plummer's pill, every night, which she continued for a considerable time. On the 13th of November, I was requested to take charge of her, as she was apparently very ill; had been complaining of abdominal pain for the last week; and during the last two days had become jaundiced. I found the bowels rather confined; urine tinged with bile; pulse moderate, but quick; slight tenderness at the pit of the stomach. (Fourteen ounces of blood were ordered to be drawn by cupping from the region of the liver; the belly to be fomented: five grains of mercury with chalk to be taken immediately, and half an ounce of castor-oil four hours after, and to be repeated until the bowels should be relaxed.) 14th.—There is still some tenderness on pressure at the pit of the stomach, and accelerated pulse. (Fifteen leeches to the pit of the stomach; the mercury with chalk, and the castor-oil, to be repeated.) The yellowness increased; the stools continued of a pale clay colour; the tenderness of the upper part of the abdomen continued. It is unnecessary to give a detail of all the daily symptoms. Cupping, mercurial purges, and blue pill, with fomentations, were continued; and during ten days no very remarkable change occurred. (*The woman must have had a strong constitution, and a considerable degree of vital force, to stand all this as well as she did.*) 24th.—Slight tenderness over the whole abdomen; colour very intense; pulse 96, small, and rather sharp; respiration, 27; bowels confined; thirst; occasional sickness; and occasional pains in the abdomen, much relieved by the fomentation. (*Mark the relieving effort of our plan in such cases; why was it not continued when it gave relief?*) 28th.—She generally prefers the sitting posture in bed. Lips dry; tongue moist and red; some sluggishness in her mode of speech, and a plaintive tone (*no wonder*); pulse 88; no sickness;

six or seven loose dejections. (Twelve leeches to the pit of the stomach; a linseed poultice to the belly.) 29th.—One copious lumpy white stool. Pulse, 96; slight tenderness of pit of stomach; respiration tranquil; tongue moist, but more red at the edges. December 1st.—Her pupils are rather dilated; her mode of utterance is dull and indistinct; complains of loss of power in the left hand; the right is already disabled by disease. 2nd.—Is lying on her right side, drowsy, with her legs drawn up, moving her left hand with a kind of jactitation, often raising it to her head; she is capable of being so far roused as to put out her tongue when pressed to do so. Tongue moist, and red at the edges; the pupils are dilated. (A blister to the crown of the head; a carthartic enema.) 3rd.—Yesterday evening she was screaming loudly, with her tongue protruded between her teeth. To-day she is in a state of perfect coma, with the eyes turned up. She is incapable of being roused, and has taken no nourishment or medicine since yesterday. She died the following day."

Mark, not one single application was given with a view to nutrition;—it was all fire and sword against the frame, until it succumbed to the superior force, skill, and science brought to bear against it; and all this done in clear contradiction to the Faculty's own discoveries,—that the life of the body exists in the nervous vitality, the vis vitæ of the ganglionic system, or nerves of nutrition. They say, whatever lowers this brings on disease and death, and yet they lower this power with a promptitude and with as steady an aim as a rifleman does his gun, and with as fatal an effect. I give the following case in Queen Elizabeth's time, of the Earl of Derby, which shows that the identical mode of action was then in use as now;—the same war to the knife against the delicate wonderful structure of the human frame. The doctors, however, had not then made the discoveries of the functions and nature of the nervous system, which are now so clear; and, consequently, they are entirely unjustified at the present time in using the barber-surgeons' mode of practice.

THE FOLLOWING IS QUOTED FROM ILLUSTRATIONS OF BRITISH HISTORY, by Edmund Lodge, and shows that the practice of killing by bleeding, blistering, and physic, was exactly the same in A.D. 1594, as the previous quotation shows it is now in A.D. 1858, as practised by the "Qualified" in our own days. It does not appear that there has been any variation in the 264 years, except that medical professors, in our day, do not attribute the failures to witches, but to the want of the power of life, which their treatment so effectually destroys.

"*Indorsed,* 'TOUCHING THE DEATH OF THE EARL OF DERBY, APRIL, 1594.'

"The 5th of April, 1594, his Honour fell sick at Knowsley; on Saturday he returned to Lathome, and feeling himself worse, he sent to Chester for one Dr. Case, who, the week before, had given physic to his lady. On the Sunday his Honour had cast seven times before the doctor's coming; the colour of his vomits was like soot or rusty iron; the substance gross and fatty; the quantity about seven pints; the smell not without some offence; his Honour's water, in colour, substance, and smell, not unlike his vomits. The same night he took a glister, which wroght five times. On Monday morning he took one drachm of rhubarb, and half an ounce of manna, in a draught of chicken broth, which wrought nine times. On Tuesday, because of his continual bleeding by vomits, he was most instantly intreated to be let blood, yet by no means he could be persuaded thereunto; therefore, that day, only fomentations, oils, and comfortable plaisters were applied. On Wednesday, by the appointment of all his doctors, he took another glister, which wrought six times; and on Thursday he took another purge, which wrought with great ease nine times. The same night he took some diascordium, which somewhat stayed his stomach from vomiting, the which never ceased, more or less, in all the time of his Honour's sickness. On Friday he took a diaphorecion, or a medicine to make him sweat; but he could not sweat, although internally and externally all helps of art were used.

That night his water stayed on a sudden. On Saturday all means were used to provoke water,—as a glister, drinks, fomentations, oils, poultices, plaisters, and syringes,—but nothing prevailed; on Sunday and Monday a catheter was used, which the surgeon often sucked, but no water appeared. On Tuesday nature declined, and his Honour most devoutly yielded his soul to God.—(*And so he got out of the hands of the doctors.*)

"In all the time of his sickness, he had fifty-two vomits and twenty-three stools. The original cause of all his diseases was thought by the physicians to be his long and over-violent exercise, which his Honour took four days in the Easter week, wherein he vehemently distempered the whole state of his body. His Honour's diseases were apparently vomiting of rusty matter and blood, yellow jaundice, swelling of the splene, melting of his fat, staying of his water, the hiccough. His Honour took Beza stone and unicorn's horn.

[It appears the doctors were so confident in their mode of practice, that they could only account for its not succeeding by attributing death to witchcraft: a council was called in, and the following report drawn up.]

"*A brief of such Reasons and Conjectures which caused many to suppose his Honour to have been bewitched.*

"1. On Thursday night, being the 4th of April, 1594, his Honour cried suddenly in his sleep, started out of his bed, sought his lady, whom he thought in a dream to be dead.

"2. On Friday, in his chamber at Knowsley, about six o'clock at night, there appeared a man, tall, as he thought, who twice crossed him swiftly; and when he came to the place where he saw him, he fell sick.

"3. The same night he dreamed that he was stabbed to the heart, and wounded in many other places of his body.

"4. There was found in my Lord's chamber, by one Mr. Hallsall, an image of wax, with a hair drawn through the belly thereof, as he reported upon his oath.

"5. One Jane, a witch, demanded of one Mr. Gowleborne, his Honour's secretary, whether my Lord felt no pain in his lower parts, and whether as yet he made any water; and at that very time, as it is thought, his Honour's water stayed.

"6. All physic wrought well, and yet he had no ease; his diseases were many, and his vomits violent, and yet his pulse ever remained good and perfect.

"7. He himself in all the time of sickness cried he was bewitched.

"8. He fell into a trance twice, not able to stir head, hand, or foot, when he should have taken physic.

"9. In the end he cried out against witches and witchcraft, reposing his only hope of salvation upon the merits of his blessed Saviour.

"10. One of the witches having said well the Lord's prayer, and being forced to call upon the name of Jesus, that if she had bewitched his Honour, she might not be able to say it, again before the examiners she said all well, till she came to *Dimitte nobis debita nostra*, which by no means she could say or repeat, although it was often rehearsed to her." (*Whether or not they burnt the witch is omitted.*)

"THE CASE OF MR. STAFFORD, M.P.—(Communicated to *The Morning Star*, Nov. 28, 1857.)—The premature and sudden death of Mr. A. Stafford is suggestive of so many painful reflections, that I am prompted to analyse in detail the medical evidence adduced at the inquest, and to inquire whether it is not possible, by the adoption of a more rational system of medical treatment, to ensure more happy results, and to avert the recurrence of similar exhibitions to that which preceded the death of the lamented member for Northamptonshire. It is indeed sad to think that there should exist such glaring differences of opinion between medical men, and sadder still to know how many valuable lives are lost through the ignorance which prevails on the subject of the healing art.

I must, *in limine*, disclaim any intention of uttering a single word that could reflect in the least upon the skill of Dr. Griffin, whose attention to, and anxiety for, his patient seems to have been unremitting. In fact, the verdict of the coroner's jury exonerates him, individually, from all blame. It is the system of medical treatment that I would take the liberty of examining.

"With this object in view, it is necessary to recapitulate portions of the evidence elicited at the inquest. Respecting the previous state of Mr. Stafford's health, we are told by his servant, Michael Naughten, that, with the exception of two attacks of illness, which together lasted not more than two hours and a half, it had been 'very good' during twenty-three years which he had lived with him. On Wednesday afternoon, the 4th of November, about three o'clock, Mr. Stafford complained of a pain in the lower part of the stomach, and said he feared that 'nasty old pain' was returning again. It became worse up to five o'clock, when Dr. Griffin, of Limerick, was sent for, and he arrived at Cratloe at half-past six o'clock. He bled Mr. Stafford and prescribed for him, leaving Cratloe between eight and nine o'clock. Michael Naughten looked into his master's bedroom about eleven o'clock, and saw that he was 'breathing very hard, much more so than usual. He was snoring at the time.' This was unusual, and he adds:—'On different occasions for the last sixteen years I was in the habit of going into his room, but I never could open the door without awaking him.' Michael Naughten again visited his master at two o'clock a.m., when he found him asleep 'lying on his back, and breathing harder than before.' He did not awake him, as he thought it was all right, and was delighted to see him asleep. At five o'clock in the morning, Mr. Stafford walked to Naughten's bedroom door, which was within a yard of his own, and called out, 'Get up; my arm is bleeding.' Naughten tied up the bleeding arm of his master, who, after a few minutes, relapsed into the sleep of narcotism. Michael Naughten roused the other servants, and sent immediately for Dr. Griffin, who arrived at Cratloe between seven and eight o'clock in the morning (November 5). He endeavoured to arouse his narcotised patient by forced walking, for 'about a quarter of an hour.' Naughten says, 'We could not keep him awake by walking any longer.' Dr. Griffin then ordered him to be put sitting in a chair, and told us to slap the soles of his feet. We put him on the bed for the same purpose. The thing next to hand was a razor-strop, which Dr. Griffin got himself, and slapped the soles of his feet for about twenty minutes. By hitting him two or three strokes on the sole, he would open his eyes, look around, and then fall asleep again. I think the doctor took the slapping to himself for the first twenty minutes, but then his hands got blistered, and he could not continue to hit him hard enough, for he was getting heavier asleep. I then strapped him with the razor-strop until the handle broke, when we got the carpenter to make battledores about eighteen inches long, four inches wide, and half an inch thick. These were made of deal. We broke about a dozen of them. We were slapping him with these almost all the time on the soles of his feet. We tried the palms of his hands and the calves of his legs, but that had not the effect of keeping him awake, and we had to go to the soles of his feet again. These got quite sore, and the skin came off. He would shake his leg sometimes, and draw it back from the person that would be hitting him, and then fall asleep once more. We were obliged to hit him hard enough to make him feel it all over. He would sit up in the chair, in spite of two men that would be holding him, and he would be scarcely up until he would fall asleep again. We continued beating him from about eight o'clock in the morning until between eight and nine o'clock at night. Five men took part in the beating, relieving each other. The doctor was present during the whole time. It was by Dr. Griffin's directions the beating process went on. When we gave up the beating, he seemed more lively. He used to stand up sometimes, and walked about once, and then fell into bed again. The dozen boards that were broken were fractured by the force of the blows that we gave him. When we ceased beating, he was put

into bed by Dr. Griffin's directions, and in his presence. The doctor asked me when he came in the morning, whether I had given my master the powder and the bottle he directed? I told him that I had not, and he said, 'I am very glad that you did not.'

"Dr. Griffin sent for Dr. Wilkinson, of Limerick, who arrived at Cratloe about one o'clock, and left about three or four o'clock. Dr. Wilkinson, after consulting with Dr. Griffin in the next room, sat down and looked at Mr. Stafford, and said, 'Beat him hard.' Dr. Wilkinson told Naughten that his master had got 'an over-dose of laudanum.' Dr. Griffin remained at Cratloe all Thursday, and left next morning, November 6th, about nine o'clock. Michael Naughten sat up with his master all Thursday night, and visited him about twenty times. Mr. Stafford slept and started alternately during the night, breathed very hard and snored; 'he was always nodding asleep and snoring up to the time of his death.' Mr. Stafford left Cratloe on Tuesday, the 10th of November, and slept that night at Limerick, and arrived in Dublin on the following day, Wednesday, at four P.M., his journey by rail having occupied four hours and a half. After 'nightfall' of this day, he was visited by Sir Henry Marsh, whose evidence we will defer until we have heard that of Colonel Herbert, M.P., the Chief Secretary for Ireland, who says:—'I was a very intimate friend for many years of the late Mr. Stafford, and visited him during his recent illness in Dublin. . . . On last Thursday, November 12th, about twelve o'clock, I received a letter from him, in which he stated that he had been dangerously ill and that it was doubtful whether he would ever recover. . . . When I arrived, he was lying on a chair in his room, with his feet on another chair. His servant was dressing the soles of his feet. The first sound that I heard was a groan of pain, from his servant apparently touching his foot. I was much shocked with his appearance. He described the agonies he had suffered during the treatment, and was certainly convinced that the cause of his death was the treatment to which he had been subjected. I attended him to the last, and was present on Sunday evening (November 15th), when he died. He gave me to understand that he had suffered very acutely from the pain of the disease, but he alluded more particularly to the pain of the beating.'

"Let us now examine the evidence of Sir Henry Marsh, who says:—'Upon this day week, Wednesday last, November 11th, I first attended him. I saw him about seven o'clock on that evening. He was up, but in a state of extreme debility. At the moment I saw him, I felt certain that he had travelled too soon. He was not fit for such a journey as from Limerick. He had great difficulty in getting upstairs.' (May this not be accounted for, in a great measure, by the state of Mr. Stafford's feet, which Colonel Herbert describes, and which he saw on the day following Sir Henry Marsh's visit?) 'I have a strong impression,' continues Sir Henry, 'that the violent and agonising pain complained of in the original attack arose from gall-stones. I suspected it during the lifetime of Mr. Stafford, but had no proof of it until the post-mortem examination, during the whole of which I was not present, but at quite sufficient to form that opinion. The gall-stones were in the gall-bladder, and I am led to think that one had commenced to get into the duct, and caused the great pain.'"

NOTES WORTH CONSIDERATION.

At the risk of tiring the patience of my readers with the contradictions in medical practice, and of confusing their ideas on these subjects, I give the following from the *Medical Journal*, February 21, 1863, showing what entire and perfect disagreement there is between the most eminent medical professors on the very grounds and foundation of practice. They are, in these times of advanced knowledge unable to agree on general principles; and this being the case,

they have no common, fundamental principles to act upon. Dr. Chambers, Dr. Austie, Sir John Forbes, Dr. Conquest, Sir B. Brodie, appear all to have found by experience that life is not to be sustained by Dr. Beale's remedies of counter irritation, &c., and they come to the natural and sound conclusion that what will not aid the vital principle of the body will not enable a diseased organ to throw off disease; and that it is only by aiding nutrition—increasing the vital powers of the blood-making organs—that any hope of restoration to a healthy state can be expected. But, as I have remarked before, that while holding this common-sense, sound doctrine, they yet teach students to purge, vomit, blister, seton, and issue the poor diseased or weak frame; and, as it will be seen by Dr. Beale's attack on Dr. Chambers, Dr. Beale makes the absurd statement, that to destroy disease, the life of the body—the vital functions—must be lowered, and consequently the blood-making powers and functionary action of the stomach, the liver, kidneys, bowels, brain, and whole nervous system, must suffer, as all the frame, it is obvious, must sympathise together. Dr. Beale talks of destroying the life of a cancer by lowering its action; but what means does he propose but those which necessarily injure the whole animal economy? And as to the destroying the life of a cancer, the common-sense view of the case, one would suppose, would be to try to get good blood, and good circulation, and nervous vitality to it, with a view to give power to the part to conquer the morbid action—the only way to restore health to the part. This, we see constantly, is the case with the numbers who come to us with diseased limbs, or ulcerations, or congested organs, internally and externally, and by our poultices, our fomentations, our spongios, and wash-leather bandages; and various similar applications to the diseased parts, arterial blood is determined to the parts, nervous vitality is increased; and as sure as guano tells upon vegetation, and turns poor grass into good, and destroys bad grass, so the true regenerative principle acts when good blood is determined to any diseased organ. It may be asked, How will this apply to congestion of the brain, or liver, or any organ? Dr. Beale says he aims at diminishing the supply of blood to a congested part to allow the organ to recover; but if this could be done, it can only be attempted by weakening the vital action of the part—and, as a matter of course, not only that part, but every other part—he is positively preventing life to the organ, not aiding it. Dr. Chambers and others have hit on the plain, fundamental, common-sense view of the nature and cure of disease—that deficiency of vitality is the cause, and the true remedy is, to use no means but what will aid nutrition and vitality. Dr. Beale and others are for doctoring the organ alone and *making it act*, ignoring the obvious fact that if one member suffers all suffer, and one part cannot be cured but the benefit of such curative means must extend to the whole frame. We find by applying Dr. Chambers's and others' sound principle, of using no means to remedy disease but what directly or indirectly aids the work of nutrition, successful; and, by our leg and foot-baths, by our stomach and liver packs, by our tepid dripping sheets, by our vapour-baths and wash over after, we look to stimulating the whole circulation, while, at the same time, by the local packs as above, we reach individual organs, comforting, stimulating, and nourishing them, and the whole frame feels the comfort at the same time. This is a very different affair when the horrid system of torture from the chemist's shop is prescribed.

Medical practitioners appear to ignore the fact of nervous vitality being the basis and cause of action of every organ and every part of the frame, and for want of this consideration arise the terrible effects of drugs, blisters, &c. An artery cannot propel the blood, but by nervous vitality in the structure of the artery, as shown in the cut, page 128 of this work, the liver, as observed in this work, only acts in taking out the impurities of the blood by nervous vitality, and the gall is deposited in the gall bladder by the force of nervous vitality, and again the gall is expelled from the gall bladder into the bowels by the same nervous power, and so by every function. Now all purgatives, blisters, bleeding, &c., lower this nervous vitality,

and consequently the power of the organs to do their office. I hear it often said doctors do not administer so much physic, nor bleed and blister to the extent formerly practised; but I ask what remedies they have but these anti-vital measures; and if they have lost confidence in them as they go on in practice, and give less and less, why do they not see if they cannot discover remedies for diseases which do not begin by taking away what is wanted — more vitality.

What a censure it is on the practice of the medical faculty when cases of ulceration, old injuries causing congestion and decay of parts, and various chronic diseases, come to us and get cured, after resisting all the efforts of the most eminent of the medical faculty. And yet we have had no medical education, nor any previous training in hospitable practice, nor can we lay claim to any more than ordinary knowledge of the business of life. The fact is, we act upon Nature's own principle of restoration, and it succeeds. Only last week, a gentleman, aged fifty-four, came to us with a bad leg from an injury fifteen years ago; and, as expense was no consideration, he had tried the faculty, but in vain, his leg remaining discoloured and inflamed, and the disease getting up into his thigh, he became alarmed. As soon as I saw the case, I could tell him with confidence it would give us little trouble to cure him; and in a fortnight the disease was subdued above the knee, and the injured part perfectly easy, and showing how Nature was rapidly bringing nutritive blood into all the small veins which had been so long closed. Such cases, at even advanced periods of life, never fail of being cured, if they will give reasonable time; yet bad legs or arms are the opprobrium of the medical profession. I wish, however, to add, ours is not the "cold-water cure," for cold water will certainly never cure such cases.

(*Compare this doctors' Case with my own more severe knee injury—Index.*)

"I have been recommended by a lady friend, who informs me that her cousin, Mary Raven, Maldon, Essex, went to your Establishment, and from the treatment there is now able to walk well. I have concluded that her case is somewhat similar to my own. I proceed to give you particulars of it. Last February twelve months I was riding in a trap, when the wheel suddenly broke, and pitched me out. When the swelling had gone down it was seen that the tendons below the cap of the knee were injured, I think partially severed. I improved rapidly, and was able to get out in a month. I should say that ice only was applied to my knee, afterwards I frequently had cold water run upon it. About four months ago, one of the railway porters in passing me coming out of the station, hit me on the back of my knee. I did not fall, but felt the sudden shock very much. A short time after, in walking, I found a sudden weakness or tremor come in my knee, and I had difficulty with the aid of my walking stick to prevent myself from falling. Since this occurred the sinking where the injury was became deeper. My doctor says that the tendon or ligament had quite given way; this I have no doubt is the case. Since this blow I had been wearing a very strong knee-cap, and always a wet bandage; and for a few weeks I was obliged to ride a good deal, and could not have my leg in a comfortable position. Ten weeks ago an inflammation commenced in my knee; most fearful. I got off the bed for the first time on Tuesday last. Ice for a fortnight was applied, and since linseed poultices. On Sunday last it was bound up with sticking plasters, and bandaged. I am now sitting with it in a level position. I should say I have not had any inflammation in it since the accident until ten weeks ago. I have gone into these few particulars to enable you to give me your opinion, as to the desirability of me having your treatment at Matlock Bank as soon as I am able to remove. I am most anxious to have the best cure I can, as I have a wife and small family entirely dependent upon my exertions. I am forty-six years of age, very healthy, have had no illness

during my life; am also stout. I have lost considerably in weight during my confinement. My doctor tells me he never met with a stronger constitution. Please favour me with your views."

"I am purposing to visit your Establishment for an unlimited time, owing to a great mental prostration which has been coming on for five years, and I have tried the most eminent and professional men out of London. The result has been very unsatisfactory indeed. I am ten times worse now than I was six months ago, under the supposed or fancied ability of Dr. ——, who is a professor, and considered the best adviser in Manchester. My opinion of him is that he ought to return the money he has swindled me out of, as he promised that he could cure me. I wish you to write to me saying if you can make room for me per return, as I purpose coming on Saturday morning next."

(*How old persons are extinguished for want of good judgment.*)

"My very respected Friend,—I write to inform you how I feel myself, as I fancy I am going to die; but if you think otherwise I am willing to take your advice, and think the same. I have been troubled with shortness of breathing all winter, and sometimes better, and just as I kept from cold, but never clear of shortness of breath. I have ventured to go to a doctor, and I have had two bottles, not bad, to take three times a day, but I feel no better for them; and he ordered me to take two glasses of sherry wine a day, and to live well; but I soon found I could not take the wine, it made me all stupid in my head, so I would take no more. He kept asking me if my legs swelled, which I told him no; and I believe if I followed on with his medicine he would kill me. Now, what would you advise me to do in the case? I do not know. I am seventy years of age, and could, if it pleased the Lord, like to live a little longer, if it is His will. I should do so to serve the Lord. Since last Thursday I have been worse. I eat a little supper before going to bed, but I had to suffer for it, coughing and spitting all night, and my limbs has been stiffer ever since. I could walk about but very slowly. I have rather improved in my walking a little, and I hope shall do if I take no more medicine, which I do not intend to do. I have only taken one bottle, the other I have left. I could take it in three days, three times a day. He kept asking me if my legs had not began to swell; as he kept inquiring if my legs swelled, which he appeared rather surprised. I want nothing of doctors whatever.—With my kind regards."

(*Consumption.*)

Edward Denison was born 1840, at Salisbury, of which diocese his father was bishop. He was nephew of the late Speaker of the House of Commons, now Lord Ossington, educated at Eton and at Christchurch, Oxford. At Eton, in the "eight," he over exerted himself training for a boat race, which brought on congestion of the lungs, of which he eventually died, at the age of thirty, at Melbourne, Australia, where he had gone for his recovery. Before that journey he travelled in various parts of Europe to get over the disease which destroyed him, but in vain; and now the same senseless process is going on at Oxford, Cambridge, and Eton. Edward Denison was M.P. for Newark in 1868, and had the finest prospects of distinguishing himself; but if young men not bred to be bargemen or Alpine guides will disregard common sense, they must pay the penalty. (*See Neurotic Temperament, Index.*)

(*From the "Times," January*, 1861.)

IT IS COLD THAT KILLS, AFTER ALL.

We know not by what freak of fashion it happens that the English people are wont to

speak of severe weather in respectful terms, and honour with such epithets as "bracing' a season which brings mourning into many a family. Did they but realise the truth, these complimentary expressions would sound like the Greek euphemisms for the infernal regions, or the endearing diminutive appellations which mediæval gaolers loved to apply to instruments of torture. Heat and damp are treated with no such tenderness, and the most energetic adjectives and participles of the Anglo-Saxon language are freely employed to characterise these unpopular conditions of the atmosphere. Yet a little reflection would convince us that cold is a far deadlier enemy of the human frame than either. If heat kills its thousands, cold kills its tens of thousands. One need not be a physiologist to understand that that which forcibly closes the pores, suspends the functions of the skin, violently repels the blood from the surface to the interior vessels of the system, lowers the action of the heart, obstructs the circulation, and benumbs the extremities, must act injuriously on the vital powers. Hot and damp weather have their specific maladies, and the more vivid consciousness of weakness which these summer ailments produce has probably contributed to bolster up the vulgar error against which we are protesting. Superficial derangements are often more sensibly felt than those which make war on life itself; and, while the former are felt more or less by all, the latter select their victims among persons already debilitated by want, disease, or old age. While the strong man is unconsciously summoning up his reserve of digestive power to repair the increased waste of tissue, the feeble lungs of the invalid are craving for fuel, which the over-taxed digestive organs can no longer supply fast enough. The "sensible warm motion" in the veins of the one, stimulated by exercise, easily resists the external cold, and abundant nutrition even creates an appetite for increased muscular exertion; while the starved organs and fibre of the other are wasting away like a burning lamp. It is simply a question of organisation. Delicate shrubs cannot survive an intense frost, and the vegetable world generally suffers in a greater degree than the animal from an excessively low temperature. Some animals, however, like certain plants, exhibit the devitalising effects of the winter by the habit of "hybernation," or passing this season in a state of sleep; while the bodily and mental powers of human beings inhabiting the frigid zone are dwarfed and stunted by the climate. It is strange, then, that we should welcome with so much zest an extreme of temperature so uncongenial to the vigour and longevity of our species.

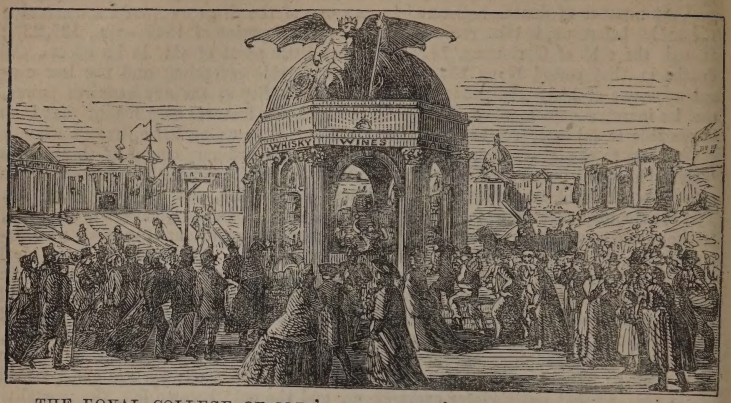
No one who peruses the Registrar-General's returns, or even watches the daily catalogue of deaths in our own columns, will be inclined to dispute these conclusions. The mortality of London for the week ending Saturday, January 19th, reached the appalling number of 1,926 deaths—an amount which not only exceeds the estimated number by 585, but is about double the average of a few weeks during the autumn. When we remember the unprecedented quantity of rain that fell in the year 1860, we could hardly have a better illustration of the comparative effects of cold and damp on the public health. Of course, we were prepared to find that the increased aggregate was chiefly due to acute disease, especially of the respiratory organs. Accordingly, we are told that "pulmonary complaints, exclusive of phthisis, carried of in the week 702 persons, while the corrected average for corresponding weeks is only 301;" and that, among these, deaths from bronchitis have been nearly three times as numerous as usual at this time of the year. Apoplexy has been so common during this cold season that it is stated by one eminent physician to have almost assumed an "epidemic" form; we are surprised, therefore, that it does not exceed the average in this return by more than 44 to 30; but paralysis has increased in a still greater proportion; and "heart diseases were fatal in 119 cases, while the average is only 53." We learn from Dr. Lethe by's Reports, that in the City of London the same general results have been obtained in that district, though of a still more marked character, and the mortality there during last week actually rose within seven of the level reached at the height of the cholera in 1848. There is no appeal from facts of this kind. "Bracing" weather puts our constitutions to a severe test, and where the flickering torch is extinguished, it is highly probable that the vital flame is proportionably diminished, even in the hardiest. Considering the present low type of disease, and

the all but universal demand for stimulants in cases for which bleeding used to be esteemed a sovereign remedy, it is painful to think what might have been the effect upon the half-famished population in the east of London, who have no means of resisting the first assaults of sickness except by obtaining admission to the workhouse or the hospital, had the frost lasted as long as those of 1796 and 1814. It is destitution which, by lowering the stamina and reducing the means of nutrition and clothing just when food and warmth are most essential to life, swells the death-rate so fearfully. It is too probable that a large proportion of the surplus mortality was preventible—if those evils can be called preventible which nothing but habits of providence, still rarely cultivated among our working orders, or a perfect system of occasional relief still remaining to be devised, could have availed to ward off. A "struggle for existence" (to use an expression that has lately become popular) is perpetually going on—not, indeed, in the form of competition between different classes of society, but in the form of self-preservation among the lower class. So long as there exists a vast body of workmen absolutely without capital or savings, and dependent on daily labour for daily subsistence, the accidents of temperature must swell the bills of mortality indefinitely. Cold immeasurably increases the poor man's wants, while it cuts short his ability to supply them, and sends him wandering about the streets. No wonder that he is tempted to spend the first sixpence which he receives in the purchase of stimulants to overcome the stupor of semi-starvation, which is too often attributed to drunkenness, when it is really the symptom of an arrested circulation and an exhausted brain. The general good health of sailors in the Arctic regions proves nothing against the depressing influence of cold, for these sailors are picked men, in the prime of life, provided with the most generous diet, and protected with the utmost care against the effects of the climate. Under such circumstances it may, perhaps, be possible to become "acclimatised," and to feel the cold less the longer the exposure to it; but, where each succeeding day's starvation is drawing upon a stock of strength always waning and never replenished, the very opposite result must follow, and disease progress towards a climax. The mortality of the last week of frost has been heavier than that of any which preceded it, and no considerable diminution must be expected for some little time. Happily, we have now turned the third week in January, after which period we are taught, by "an average of seventy-nine years," to expect a rise of temperature. If the old proverb is to be verified by an early and hot summer following on this memorable winter, let us not too hastily wish the frost back again, or forget that the weather which gives tone to the nerves, and a heightened air of comfort to the firesides of the rich, is far more noxious than the droughts of July or the dreaded effluvia of the Thames, and carries famine and death to the poor man's home. There can be no doubt, however, about the general effect of cold upon the public health. The observations which we recently made upon this subject are confirmed by the invariable testimony of figures through a long period of time. In all the thirteen years which have elapsed since 1847, there is no exception to the established rule. Winter, whether mild or severe, is the season most dangerous to life in these regions of the globe. The first quarter of the year—that is to say, the interval between the last day of December and the first day of April—always yields the greatest number of deaths. Nothing short of an epidemic pestilence can interfere with this result. In 1849 and 1854 we were visited with cholera, and in those years, and those only, the deaths of the third quarter exceeded those of the first. In the latter of the two instances, however, cold soon re-asserted its powers. The winter of 1854-55 was very severe. The frost was not, indeed, quite so intense as it was a month ago, but it was of longer duration, and the consequence was that the deaths in the first quarter of 1855 considerably exceeded those of the previous summer, though the returns had been swelled by the effects of the plague. Apart from the results of these extraordinary visitations nothing can be plainer than that the standard of public health rises with that of the temperature. Deaths are most numerous when cold is most severe. They decrease with unerring regularity as spring succeeds to winter, and become fewer still when summer succeeds to spring. As winter returns once more they once more increase, and so runs the course of

mortality year after year, with the certainty of the seasons themselves. An epidemic, as we have said, will destroy the order of things; and, as autumn is the time of epidemics, that season is liable to occasional excesses of mortality. For instance, the greatest number of deaths registered in any one of the fifty-two quarters composing the tables before us, is that returned for the cholera period of 1849—viz., 135,227; though the cold of Christmas, 1855, fell very little short of this in its effects, the deaths in that period being 134,542; but, with this exception, and the less conspicuous one of 1854, the gradual decrease of mortality as the sun acquires power, and its increase once more as that power declines, are features so constant that it is impossible to misinterpret them. Heat, in short, does us no harm, except when it contributes to the generation of a pestilence. In the ordinary course of things it is favourable to life; while cold, by creating demands which among the poorer classes cannot be satisfied, tends invariably to intensify privation, and so multiply deaths. The satisfactory character of the returns for last year is due in great part, no doubt, to the weather which prevailed, and which, though by no means agreeable, was distinguished, upon the whole, by moderate temperature. There was a good deal of cold at the beginning of the year, and its results are perceptible enough in the returns of the first quarter; but after this had disappeared, and before the cold of the present winter began, the mildness of the season was remarkable. We had really no hot weather at all, and consequently, though we suffered in other respects, we became exempted from the access of disorders which a hot summer or autumn often brings. Besides this, the incessant rain replenished our springs and purified our sewers, so that until winter overtook us, and the cold became felt, the mortality was extremely low. Once only in the fifty-two quarters is there a return below that for the third quarter of 1860; and, indeed, this exception would probably disappear if the figures were corrected according to the increase of population in the interval. We must not, however, omit to remark, that over and above the influence of atmospheric conditions, that of sanitary science seems to be making itself felt. We are assured that the activity of the health officers in various districts is at length producing its effects; and when this influence comes thoroughly into operation, we may look for a material modification of the quarterly returns. There is a large margin yet for improvement. As many as 90,000 deaths a-year are still considered preventible.

(Ruined case by doctors' treatment.)

"I take the liberty to address you on behalf of my brother, who is afflicted at the present time with paralysis of the right leg and defective sight, occasional pains at the back of the head, and general inactivity of the bowels; also nervous depression. It will be two years next July since he was attacked with inflammation of the eyes, brought on by cold and exposure to wet. I should mention that my brother is a well-built man, forty years of age, and up to that time had a fine constitution and generally enjoyed excellent health. I may add that he has always been temperate, never using stimulants, tobacco, or snuff. This inflammation proved very serious. He was treated by a qualified surgeon in Manchester, where he was then living. It returned three times, and each successive time it was treated with mercury, blisters, and leeches. He then came to Chesterfield and again had a relapse, and again went through the same process under Dr. ——; he however recovered so as to commence work in April (he is a joiner and carpenter), but only worked a very short time when this attack of paralysis disabled him entirely. He has not worked at his trade since last July. We all believe that the paralysis has been caused by mercury; and having been strongly recommended to try your treatment by people who have been greatly benefited by it, we have decided to request the favour of an interview, if you would be so kind as to write us a line to say when it would be convenient. My brother has spent a deal of money in doctoring, and his resources are now much reduced, but we are all very anxious to get him better. Will you, dear sir, take this into kind consideration?



THE ROYAL COLLEGE OF M.D.'S AND M.R.S.'S; OR, TEMPLE OF WOE—MANKIND'S CRY AND CURSE.

By way of apology for the barbarous practice of the present medical profession the public are constantly told that M.D.'s and surgeons of the present time give very little medicine, seldom bleed or use leeches, nor practice the ancient barbers' practice, for which King Henry VIII. gave a charter; but that the charter and the barbers', or rather barbarous, practice is still in full use, with a thousand more terrible additions, we have only to look into the current medical literature of the present day. "The following array of *remedies*," or rather destructions, is copied from this week's *British Medical Journal*, May 25, 1872. If such an array of pretended curative agents, which it is impossible can restore Nature's failing powers, or do anything but mischief, will not satisfy the greatest credulous lovers of nostrums, they must be very difficult to please, for every diabolical agency for the destruction of the wonderfully delicate structure of the human body appears to have been studied. The array is frightful to read, and to think of being applied to a weakened frame, ending, as the conclusion states, in tapping and death. We have had scores of these cases, and by our comforting natural treatment have been restored to health; others these diabolical batteries of destruction had made more impression upon than we could remedy, and they have returned home to be tapped and die. We cured a London M.D., given up by himself and his brother medical adviser; and in the case of a wine merchant of London, with dropsy of the bowels, a frightful case from doctors' "*remedies*," he got quite well with us; and both these cases are now in sound health. From five to seven years since they were with us, but no medicine or leeches were used whatever; and as to homœopathic practice in such cases, it is equally absurd to think their globules, their pilules, can give life and circulation; neither do they do so. For an exposition of homœopathic practice people should read Sir James Simpson's "Homœopathy, its Tenets and Tendencies" (Simpkin & Co., London). Extract, in allusion to my foregoing remarks, from the *British Medical Journal*, May 25, 1872:—

"*Treatment.*—The rules for the treatment of dropsy are based upon a knowledge of its pathology. The chief objects to be aimed at may be grouped under the following heads:—

"1. Remove when possible the cause of the dropsy. When dropsy depends upon weakness of the propelling power of the heart, or upon irregularity of its action, these conditions are often remedied by a combination of digitalis and iron, and the dropsy disappears. When it is due to congestion of the liver, or to acute nephritis, the removal of these morbid states will suffice to remove the dropsy." [Doctors have nothing but drugs to accomplish these obstructions, which only add to the mischief.]

"2. Reduce venous repletion. The most direct and certain way of unburdening the loaded veins is blood-letting; but although this is the immediate effect of blood-letting, it is, in most cases of dropsy, contra-indicated, because it tends to weaken the heart and to attenuate the blood, and so favours the transudation of serum outwards through the walls of the vessels wherever the venous current is retarded.

"3. Promote elimination of water through the natural channels of the skin, the kidneys, and the bowels, by means of diaphoretics, diuretics, and purgatives.

"*a. Diaphoretics.*—The diaphoretic remedies chiefly resorted to in dropsies are the liquor ammoniæ acetatis, antimony, Dover's powder, the warm bath, and the hot-air bath. Diaphoretics are of most use in renal dropsies, and especially in those which are acute and accompanied by fever. In cardiac dropsies they are less useful; and in portal dropsy they do no good.

"*b. Diuretics.*—The principal diuretic remedies are the bi-tartrate, acetate, and nitrate of potash, digitalis, squill, spirit of nitrous ether, scoparium, juniper, copaiba, turpentine, cantharides, and gin.

"*c. Purgatives* are useful in all forms of dropsy"—all lowering to the last degree—and then he goes on to say: "The best purgatives are those which increase the discharge of bile, or promote serous exhalation from the mucous membrane of the bowels. These are calomel and podophyllin, the saline purgatives, jalap, gamboge, and elaterium. Elaterium is the most powerful of these, but it must be given with caution, as its violent action has sometimes a depressing effect upon the heart.

"4. Improve the state of the blood and maintain the nutritive processes of the body." Purgatives and diurectics freely given—a fine way to improve the blood! they know such impoverish. And such are the contradictions by which the public are gulled and destroyed!]

If the medical profession would instruct the public in a little anatomical physiological knowledge they would confer an inestimable benefit on mankind. The public cannot understand the nature of the endless compounds described in such compounded words as bi-carbonates, &c., and the use of them. It is true they feel the effects, and often painfully and fatally too; but if the laity knew, for instance, the nature and cause of dropsy, and that the watery fluids of the body, the lymph and serum are supplied from the arterial blood, and have to percolate through the fine coats of the capillaries, they would see that purgatives and bleeding would weaken, to the inevitable effect (as the doctors own, yet prescribe them) of dilution, and, consequently, are the cause of dropsy, by supplying an excess of deteriorating watery fluid. Our simple plan is to make better blood, and to raise the digestive powers and the power of circulation by our warm external application: and, especially in dropsy, to raise the power of the lymphatic glands and serous membranes, to circulate the watery fluids, and, when they have done their office, to expel them through their natural channels—the skin, the lungs, the kidneys, and bowels; and acting on these sure and safe natural laws, we have succeeded in saving numbers from death by all the array of drugs and tapping, mentioned in the before-stated elaborate and frightful account of what the poor human frame has often to undergo, with a certainty of protracted suffering and death. Bleeding at the anus to relieve the congested blood-vessels we remedy by a simple sitz-bath, 105¼ or 58, or 119½ or 98 Bath list. We get the kidneys to act by our 70¾ Bath list, our 168¾, 220, 169¼; the liver acts by our 48, and with the same bandages: in fact, we throw overboard, not the scientific considerations of the disease, for that the doctors are thoroughly masters of, but we apply life-giving external applications, and they apply destructive internal and external agencies in the form of drugs, leeches, and tapping. The public can easily judge for themselves which is most reasonable, and in accordance with nature's laws.

(*The following is a Case of a fellow-creature ruined for life by the utter want of sensible natural restorative treatment. We should have had no difficulty in quickly curing such a Case. Our 144 Bath list, our leg spirit lamp, our poultices, chillie paste, and bandages, would have quickly restored the impeded circulation, as in the case of a general, who was a cripple, with his hip out from a similar cause. I shall try to find this Case out, and try to induce him to come to have done what ought to have been done, and leave out what ought not to have been done.*)

On August 7, 1871, I was sent for to see Mr. E. W., who was suffering from an attack of colic. On the following day he called my attention to his inability to walk on the left leg without great pain, attended with impeded movement of the ankle-joint. This had been ascribed to some disease of the veins, but the patient considered it to be the effect of rapid mounting and dismounting. The narrative he gave of himself was: "On the morning of the 1st May, 1867, at about two o'clock, I was awoke with a sharp pain in my left groin. I struck a light, and attempted to get out of bed (being at this time in the army, at Athlone, Ireland), but found I could not stand, and that my left leg was immensely swollen. At eight o'clock I was assisted into the hospital, when I was treated for rheumatism, and had my leg bandaged with wadding and flannel. I was kept to my bed, when about a fortnight elapsed, and the pain did not decrease. Six leeches were applied to my groin, and the bandage was let off. After this blisters were applied; my leg at this time being kept bandaged. After the blistering, iodine was used to paint my groin with. I was still kept confined to my bed, with my leg elevated and bandaged. This treatment continued till the latter end of July, when my leg was rubbed with a lotion, and continued till the 16th of August. All this time numerous doctors visited me, and could not give a name to my complaint. In September, I was allowed to walk a little, and continued till February, when I was put forward for discharge as incurable in ward. I may state the pain left my groin about the middle of August, and my veins in the abdomen took to swelling, and they have kept swollen since that time. Two men of great eminence in London saw me, and said it was one of those hidden complaints which were beyond human control."

(*The following case was restored entirely by our treatment.*)

Sir,—Within the last week I have had your invaluable work on "Practical Hydropathy" placed in my hands; and from consulting it, I have been led to address you respecting my own case, notwithstanding that the surgeons to whom I have mentioned the subject, and various other people whom I have considered qualified to give a sensible and unbiassed opinion regarding it, have uniformly dissuaded me from giving the treatment a trial. But as other means utterly fail in producing favourable results, I am induced to apply to you, and I trust you will, in reply, state frankly whether you consider the water cure suited to my disease. To enable you to do this, I will give you an outline of my case, and, as far as I understand it, the treatment which has been pursued. In the first place, then, I am, or rather was, a clerk—in fact, Secretary to the ——— Joint Stock Bank. Two years and a half since—I being at that time under twenty years of age—an abscess formed on the left side of the spine, without any apparent cause, as up to that time I did not consider myself to be particularly unhealthy. Having formed, however, the abscess resisted all attempts at absorption, and after three or four months a regular opening was made, and the matter evacuated. As there was not the slightest evidence of decayed bone, hopes were then entertained that I should not be troubled with it again. In the course of a few weeks, however, the matter again began to collect, and I was sent to the sea-side, my surgeon in ——— recommending that on my arrival there, a free opening should be made with a knife. Well, I came down to G———, and the surgeon I employed there, holding a different opinion to my former surgeon, declined to make another opening, but endeavoured to create absorption by the application of salt water bandages, iodine, &c. The consequence was, that in two months there was more matter than ever, and it had

found its way across the spine to the other side of the back. I then determined to have the opinion of some eminent man in London, and went up in the hope of seeing Sir B. Brodie ; he being out of town, however, I took the advice of an eminent surgeon, Mr. ———, who recommended me to return at once to the country, have it cut, and, lying on the sofa for a few months, allow the system to throw off all this matter ; the place would then heal up. In accordance with this advice, I returned to my native place, and placed myself again in the hands of Dr. ———. He at once used the knife, and made a cut nearly two inches long, and perhaps an inch or more deep. A piece of bone came out attached to the blade of the knife; whether it was a piece of decayed coming away, or the knife struck the bone, I cannot say. A few weeks afterwards it was deemed necessary to make another opening on the opposite side of the spine, and this was indeed a painful operation. The probe was pushed into the opening already made, across the spine, and as far over the right side of the back as it would go. An attempt was then made to cut down exactly to the point of it with the knife : failing in this, he had, of course, to slash about until the knife touched the probe. In a few months I apparently recovered ; both sores continued open, but they might be said to have ceased to discharge, and I was led to expect they would soon close. Well, I fancied myself strong enough to return to business again, and accordingly I did so in October, 1859 (this was nine months after the first appearance of the abscess). After being at the bank a month, I was suddenly and unexpectedly struck down again, and in two days was worse than ever ; my case apparently more hopeless. I gradually became very weak and emaciated, and suffered much : the only sleep I obtained was from the use of morphia ; and the sores continued to discharge largely. About Christmas time, Dr. ——— came to see me from ———, and operated again, in the hope of discovering the source of the disease; for by this time it was evident there was disease of the bone somewhere. He, however, entirely failed in his object, and the only result of the operation was increased weakness. I continued in this state, without material improvement, but having constant medical attendance, until August. During the whole of that time I remained almost entirely in bed, and was caused additional pain by two large bed-sores, which formed on the hip, &c. ; indeed, it was feared, at one time, that they alone would cause death. In August, I was again removed to this place, and have remained here since. Since I came here two fresh sores have broken out, making openings for themselves; one on the hip, and the other on the thigh—the matter evidently following the course of the psoas muscle. The discharge had at one time (about last Christmas) almost ceased, but there is now about a tablespoonful a day from all the places together ; and, within the last three months, several pieces of bone have come away. I will inclose you a bit herewith for your inspection. I use no application outwardly, simply a dressing of cotton wool ; nor do I take any medicines, except occasionally a tonic. Although there is a great improvement in me since I came here, nine months ago, and as I am seated, seem to all appearances quite well, yet, except under a change of treatment, I see no prospect of gaining *health*, or of the sores healing.

For three or four months I have been at a perfect stand-still, and this is the time when I anticipated making most progress. I cannot walk without assistance. One of the early effects of the disease was, to contract the right leg, and I have never been able to get it straight.

During the whole of my illness I have been allowed as much nourishing food as I could take, and port wine, porter, ale, &c.

I have now given you the principal points of my case, as they have occurred to me. I hope they may not prove wearisome to you ; and I trust you will give me your candid opinion respecting the treatment as applied to my case, forwarding me, at the same time, your list of charges.

I remain, Sir, yours faithfully,

R * * * * *.

Major ———, from exposure and hardships abroad, returned to England a cripple, from rheumatism and general prostration. Bowels and kidneys of course could not perform their office properly. He was under eminent London medical practitioners, and the usual course was taken to *compel* action of the organs, until no action could be got but by artificial means. The poor emaciated patient had had no means tried which directly or indirectly aided the work of nutrition, but directly the reverse, and the usual consequences followed. Dr. J * * * *, celebrated for his attention to diseases of the urinary organs, could only relieve him by using the catheter; and soon after this anti-vital plan was commenced, the parts became so deadened that the patient never passed urine naturally; mucous and blood constantly came with the urine, and the odour was highly offensive. After he came to us he never had occasion to use the catheter at all; our comforting sitz baths, bandages, &c., brought life again to the organs, and they acted naturally. He left us greatly improved in his general health, and it he could have staid would have lost his rheumatism. He was told in London the bladder and kidneys were diseased, but the offensive odour of the urine and the mucous and blood soon disappeared under our treatment. It was the constant use of artificial means to *compel* the organs to act which had so damaged the mucous membrane lining and the nervous power. I told him soon after he came he had no disease but what had been caused by the unnatural use of the instruments, &c.; but until he got quite restored he could not believe me, seeing that such high authorities had given an opposite opinion. Facts, however, convinced him.

At the moment I am writing this a letter comes in, marked—"*Immediate*," as follows:—

"Regent Street, 16*th January*, 1863.

"Mr. Smedley,

"Dear Sir,—A gentleman friend of mine was taken ill the early part of last year with hemorrhage of the bowels, which ultimately brought on ulcerated bowels. Was attended by a physician and surgeon, who, after a long attendance upon him, ordered change of air. He went to Yarmouth for two months, was partially restored, and went to business again. In October last took cold from wet feet; had again to call in the physician and surgeon for the same complaint, who, after all these weeks of attendance can give no relief, but say his liver is now affected. His friends despair of his life. He is a young man, with a small family. We have advised his removal to Matlock for months. He thinks it would do him good, so do some of his friends; 'but they are afraid he is so weak that if anything should happen to him on the road the doctors would say it was their fault, and they killed him; although he is getting worse and worse, and we feel sure must die.' Can you give us any hope that the treatment practised at your Establishment would be beneficial in his case? They are people of good circumstances, and money would be *no object* if his health could be restored. We have lent them your work upon Hydropathy; they partially believe it, but *are afraid* of the *doctors*. Trusting, Sir, you will answer at your earliest convenience."

Now mark the usual course in such practice. After trying various authorised "*remedies*," according to the London Pharmacopœia, and finding the patient sinking, he is sent to the sea-side, the doctors seeing that he must soon die under their active "remedies," and they think a change, and leaving the patient without physic, and a little to Nature's care, the only chance of life. Now such cases we do not send away, and leave them to Nature, for we know Nature is too prostrated to raise her powers without aid; but until the sound theory of Dr. Chambers, Dr. Anstey, and others, is *acted upon*, and no means used but such as aid the work of nutrition, the poor diseased frame must succumb under drugs, blisters, &c. &c. As to poor infants, drugs soon extinguish the little vitality they possess, and no wonder so many die in infancy.

The following case I sent a bathman to bring to my establishment. I see no reason to doubt his recovery. He is already benefited; but as this is going to press, I cannot say more:—

"MR. SMEDLEY,

"SIR,—I have taken the liberty of writing to you respecting my father, who is now ill in bed; and I have been recommended to you by one who has been under your treatment. He has been examined by three medical men, who said it was piles; but the physician and surgeon have since said that it is not piles, and that they could not cure him; and so now he is neither getting cured or relieved.

"The symptoms are these: for about a year he has had great irregularity in his bowels, but took no notice of it, but took opening medicine, and continued to get worse, and gave up work because he became so weak. He has no natural motion, but is either costive or the other extreme, and accompanied by blood; can scarcely take anything, and when he does so is filled with wind; and also has a constant pain in the lower part of the body, sometimes very severe.

"My father is a farmer; has been a very temperate man, very rarely taking alcoholic drinks; is fifty-eight years old, and has worked hard all his life; he once had the ague, and I feared it would return, as he had a severe attack last week, which prostrated him for several days. Of course we are extremely anxious to try every means for his restoration; and I believe, *if* he could be conveyed to your establishment, it would be more likely to prove beneficial than anything else; but I thought it best to acquaint you with his state before taking any further steps. I shall be very much obliged if you will say whether it would be advisable to bring him (I believe I omitted to say that the doctors thought it would prove to be a cancer, but did not tell him so; but I think not, as his state answers to the description given in your 'Practical Hydropathy' on Piles—he has two or three separate substances forming in the lower part of his body). If you think he should come, a difficulty will arise as to how to bring him, he is so weak, and the distance so long (seventy miles about), and the closet almost constantly employed; and unless the journey can be accomplished quickly, he will fail in the undertaking.

"I must apologise for taking up so much of your time, but I am extremely anxious about father; and, if you consider it a case in which you can succeed, I will try to bring him.

The following case came and is rapidly being cured. The ailment has been brought on by the physic and operations.

"MR. SMEDLEY,

"DEAR SIR,—I feel convinced that you will give me an answer to this letter, because I believe that you are a well-wisher of mankind generally. I want to describe a complaint to you that has troubled me for two years, and is at the present time baffling the skill of one of the cleverest doctors in S——, at the Infirmary. Such is my opinion, judging from his proceedings. But I fear that I shall give offence with my rough and indelicate way of expressing myself; yet duty to myself and family bids me try and do my best.

"I think that some kind of a disease of the seat, or rectum, is the complaint that has troubled me for so long a time. During the year 1861 I and many others thought I had the piles inwardly. Being ignorant of the fearful effects of purging medicines, I took such medicines for six months more or less, in order to get easy motions. At the end of the first six months, I had distracting pains each side of my head, and was not able to do anything, not even walk about the house. I became alarmed; thought I had got the brain fever, so sent for the

doctor. I told him of the pain I had in my head, and of the piles inwardly (as I thought). He tried to give me ease in my head, but failed until the tenth day; he then ordered me hot flannels—half water and, I think, half vinegar. I had then a few hours' ease, but the pain very soon returned, and has never left me, more or less. I have great pain in my head while writing this letter; in fact, I have never been without for the last eighteen months. He never mentioned the complaint that I told him of inwardly, so I have concluded that the first doctor began at the wrong end first. During the month of December, 1861, I was in a fearful state at my seat; I had, as it were, to bare my seat, or it was like opening a wound before I could get a motion. I could have screamed with pain during every motion for a month. A friend of mine would have me try injections. I took one every night for three weeks; I felt quite overjoyed while taking them. I kept thinking I was all right—quite cured; however, if I was not cured yet, I gained much strength, and felt another man. In March, 1862, I was as bad as ever. Dr. H——, of S———, gave me his advice free for about five weeks; he did nothing but purge me. I felt weaker after being under him for the five weeks. In April, 1862, I began to diet myself more than ever, having no faith in doctors. I cast aside entirely meat, pastry, and white bread, and sponged myself night and morning, from April to the present time. I have lived on cocoa, gruel, new milk, a few potatoes, eggs, and the best flour with bran in it. In September, 1862, I was prevailed on to try our Infirmary. I was under Dr. B——, and am at the present time. I wish you to mark him, me, and my complaint at this particular time. I thought that he had found out my complaint, was going the right way to work, and that I should be speedily cured. 'What is the matter with you?' said he. 'I think I have the piles inwardly, sir.' 'Do they come down?' 'No, sir; I can feel a little of something just inside my seat when I have a motion, but nothing hangs down.' 'Is that all the reason you have for thinking you have the piles?' 'Yes, sir.' He gave me some medicines, and sees me every Saturday. I was no better the third Saturday. 'Go to No. 6 ward,' said he, 'and I will examine you shortly. 'This is going the right way to work,' thought I. He came with a young doctor that is in the house. I knelt on the bed with my head down. He passed a bougie, which hurt me a little, thinking of finding a stoppage. 'I can feel no stoppage,' said he to the young doctor. 'Indeed!' 'No. That will do, my man. Have you much straining?' 'Yes; a deal. My motions come through me like marbles or nuts, which sometimes break the skin, and causes me great pain.' 'Well, try this medicine, and see how it acts with you. In about three weeks after the first examination, he examined me again. The day before he examined me a second time, I had a very strong motion, which broke the skin very much. I told him of this. 'Go into No. 6 ward; I will examine you again.' He got some oil, and pressed up the rectum, perhaps thinking my seat was down with having much straining the day before; this caused me great pain. 'Does it hurt you much?' 'Very much. If you will look, I think you will see where the skin is broken. 'Turn round,' said he, 'to the light. Oh, I see. Look here, Dr. B——' (the house doctor). 'I will soon have that right,' said Dr. B——; 'fetch me that instrument.' 'Are you going to cut me, sir?' 'Well, there is a crack. It is not deep enough; I want to make it deeper.' 'I am afraid to be cut there, sir.' 'Very well. This is no prison—you can please yourself; but neither dieting nor all the injections in the world will cure you.' He spoke very kind to me the above words, and then left me—of course very sad. Dr. B—— is of high standing in S———. Many advised me to make up my mind, and let him operate on me, which I did. I went the Saturday after; he was ill. I went again the following Saturday. 'Well,' said he, 'there is not a bed at liberty.' 'Shall I have to lay long in bed, sir?' 'It would be as well for you to lay in bed quiet for two or three days.' This alarmed me very much, indeed. My wife and mother advised me to try a friend for a little money, and have Dr.

B—— at home, it might lead to an abscess; which I did. Dr. B—— visited me at my home on Friday, the 21st of this month. He examined me (you must bear in mind that three weeks had elapsed since he turned me to the light, and saw the skin was broken). 'Why, it is nearly healed where the skin was broken.' 'I dare say,' I replied; 'injections have healed the place often.' 'Well, I don't object to them, but your bowels are rather too much confined at present; I cannot see far enough. Take a little castor-oil on Saturday night, and I will visit you on Sunday,' which was the 23rd. He got some oil, and pressed with his finger very much each side of my seat, and upwards as well, which was very painful. He conversed with me about eight minutes, and thought there was no need of an operation, since it was healing up nicely. He said, 'If hard motions or formed motions break the skin, what you have to manage is to get soft motions.' 'I cannot unless I purge myself, and continued loose motions make me weak;' but he could not think so, and thus ended the operation. He says he cannot feel anything, and if I go to the Infirmary to-morrow he will pass a bougie. I have had an injection every night this week rather than purge myself, and I feel a deal stronger in myself, yet every motion comes through me as round as marbles. Something presses downwards, and feels very unpleasant, besides taking all the strength I have to keep it up, even with injections. I am very uneasy in mind, because I cannot get to know what is the matter with me. Dr. B—— says it is not a stricture, and that it is nothing relative to either an abscess or a fistula, yet he does not say what he thinks it is.

"I have got the third edition of your 'Practical Hydropathy. I keep thinking that a certain treatment of bathing or sitz would set me right once more, and I came over to Matlock for a day last August, for the purpose of asking your opinion, but you had left the baths an hour when I arrived. If you will favour me with a letter containing your opinion of my complaint, and your advice also, I shall ever feel obliged to you.

"Yours, &c.,

"*November* 28, 1862. "G—— G——."

Case of severe dyspepsia. Liver and brain congested. From a residence in India thirteen years, which quite incapacitated him for any business, and he had given up all hopes of regaining health:—

"*6th July*, 1862.

"DEAR MR. SMEDLEY,

"I have delayed writing to tell you how I was getting on till I saw if my cure should be permanent. So far I am happy to say that I keep quite well, indeed better than when I left you, and by the end of summer I shall be better still. I still keep up a little of the treatment, and find it keeps me in perfect health. Your book is now my handbook of health, and a very safe one I find it.

"Now I am on my way north, and I fear I shall have some difficulty in getting what I want in the way of baths; in London I found none. I find I can get any sort of wine from any part of the world, but a little clear cold water in a sitz bath is a difficulty, strange to say; and the further north I go I fear the difficulty will increase. Would you, therefore, put up for me a sitz bath and blanket, a lamp and India-rubber petticoat, or sort of cloak for sweating, a chest compress, and one of each of the other sorts for the stomach, a sheet of India-rubber, and anything else that you think I shall require. You will be good enough to forward these at your earliest convenience, as I shall be in Scotland next week. If you can spare time to write any advice, I shall be glad to receive and treasure it.

"The *Africa* has arrived at Queenstown, and brings most exciting accounts, which you will learn from the papers before you get this letter. Your former

predictions are coming pretty true. I wish I had bought cotton when you advised it; it is pretty clear that we must not look for cotton from the States for long, if ever; and India cannot give us what we want."

EXPERIMENTING ON THE HUMAN BODY.

THE following is from the *Mental Science Review*, signed, as will be seen, by five physicians. A case of delirium tremens was brought to us. We soon got him quite well, and he went to his business a new man; but afterwards he was tempted by an acquaintance to try some old port wine. This overpowered his resolution, he had delirium tremens again. Two surgeons sent him to a lunatic asylum. I have now in my possession a letter from him, written in the most intelligent and piteous terms, begging of me to get him out. He said they were forcing opiates upon him every night, stimulants and physic. I could not help him. In six weeks he died, leaving a wife and family.

"10. As hydrate of chloralis, a new and comparatively untried medicine, it should be largely used, and its effects most carefully studied. The following rules for its administration should be observed:—

"1st. It should be given for sleeplessness in all forms of insanity that come under observation for the next six months, in doses beginning with 20 grains and increasing 10 grains until sound sleep is produced. The following are the points to be chiefly noted:— (*a*) The dose required to produce sleep in the various cases; (*b*) the length of time which elapses before sleep is produced after the patient gets the medicine; (*c*) the character of the sleep; (*d*) its duration; (*e*) the state of the patient after he awakes, as regards excitement or depression (*f*) the state of the appetite; (*g*) the state of the mucous membrane of the mouth and of the tongue; (*h*) the state of the bowels afterwards; (*i*) whether the same dose has the same effect at all times; (*k*) whether the medicine loses its effect after being given for some time, and after how long; (*l*) the temperature.

"2nd. It should be given during the day every three hours in all the classes above defined, except in class 1 of the incurable and those in which *c*, *d*, *e*, are present, and doses beginning with 20 grains and going up to 40 grains, and its effects carefully noted as regards the functions of the brain, the spinal cord, the digestive system, the heart, and on the weight and temperature. Negative results should be noted as well as positive.

"11. If chloral should fail to do good or do obvious harm, they suggest that opium be given in the same manner, except to classes 1 and 2 of the curable, and 1, 2, and 4 of the incurable; or when features *d* and *e* are present, in doses beginning with 45 minims of tincture, and increasing till the effect is produced up to 4 drachms, to procure sleep at night, the same facts being noted as in the case of chloral.

"Also that opium be given thrice a day during the day in the same classes, in doses beginning at 30 minims, and increasing up to 90 minims of the tincture.

"12. In all the cases in which opium fails to do good after a fortnight's trial, hyoscyamus is to be used in the same way, in doses beginning with 2 drachms of the tincture, and increasing up to 6 drachms to procure sleep, and in doses rising from 1 drachm to 4 drachms during the day.

"13. If hyoscyamus fail to do good, the bromide of potassium is to be used in doses of from 30 grains to 2 drachms to procure sleep, and from half a drachm to 1 drachm thrice a day.

"14. If the bromide of potassium fail to do good, from 30 minims up to 1 drachm of tincture of cannabis Indica to be added to the dose of the bromide to procure sleep, and from 30 minims up to 45 minims to each dose during the day.

"15. If the combination of the bromide and cannabis Indica fail to do good or

do harm, from 2 drachms up to half an ounce of the tincture of hyoscyamus to be added to each dose of the bromide to procure sleep, and from 1 drachm up to 3 drachms to subdue excitement."

"16. All cases in class 2 of the incurable to be put on bromide of potassium thrice a day, in doses beginning with 10 grains, and increasing by 10 grains up to 50 grains, then by 5 grains up to 60 grains; the patients to get each quantity for a month, so that the experiment lasts for six months. The following facts are to be noted every week:—(*a*) the number of fits; (*b*) the kind of fits; (*c*) the weight; (*d*) the morning and evening temperature; (*e*) the pulse; (*f*) the mental state. The good or evil or negative results to be particularly observed.

"17. That the effects of any of the neurotics mentioned in the third division of paragraph 7, when given for any of the symptoms enumerated in paragraph 4 in cases not under systematic treatment or included in any of the groups of the classification, be recorded, the doses mentioned above being adhered to, so as to accumulate a body of facts that may in time be capable of being analysed. Especially we consider the following questions worthy of investigation:—

1.	The effects of opium on	Simple depression.
2.	„ „ „	Delirious excitement.
3.	„ chloral „	Sleeplessness.
4.	„ „ „	Delirious excitement.
5.	Effect of chloral and bromide of potassium on	A craving for stimulants.
6.	„ bromide of potassium	Periodicity.
7.	„ „ on	Simple Depression.
8.	„ „ „	Sleeplessness.
9.	„ of hydrocyanic acid „	Delirious excitement.
10.	„ hyoscyamus „	General paralytic excitement.
11.	„ „ along with bromide of potassium „	„ „ „ „
12.	„ veratrium viride „	The length of convulsive attacks.

"18. Any medicine causing much sickness, want of appetite, loss in weight temperature above 99.5°, positive aggravation of the symptoms of the disease, faintness, or any effects threatening danger to the patient's health or life, to be at once discontinued.

"DAVID SKAE, M.D. J. BATTY TUKE, M.D.
ROBERT SMITH, M.D. JOHN SIBBALD, M.D.
JAMES C. HOWDEN, M.D. T. S. CLOUSTON, M.D.
Secretary."

CROTON-CHLORAL-HYDRATE.

At the recent meeting of German naturalists and physicians, Dr. O. Liebrich, to whom medicine is indebted for the introduction of chloral, called attention to the properties of a narcotic agent termed "croton-chloral-hydrate." It is made by passing chlorine into allyl; and is decomposed by alkalies into dichloride of allyl and formic acid, hydrochloric acid being also formed. The first effect of its administration to animals is marked anæsthesia of the head, whilst sensation is preserved over the rest of the body. Next, there is a general loss of reflex irritability; the pulse and respiration remaining unchanged. If a clear dose be given, death is produced by paralysis of the medulla oblongata. The animal may be preserved alive by artificial respiration, the action of the heart remaining unaltered; whereas the final effect of chloral is to produce paralysis of the heart. That death arises from paralysis of the medulla oblongata in animals poisoned by croton-chloral-hydrate, is shown by the fact that contraction of the diaphragm is not produced by galvanism of the central end of the vagus, whereas it follows irritation of the phrenic nerve. When the animal has so far recovered that the

breathing has become natural, then irritation of the central end of the vagus produces contraction of the diaphragm. The effects of this agent had also been tried on the human subject in the Berlin Hospital. In a child to which it was given, complete anæsthesia of the parts supplied by the trigiminus nerve was produced, while the reflex irritability of the rest of the body was retained. The pulse and respiration were unchanged in number throughout. Further researches on insane patients gave the same result; and Dr. Liebrich concluded therefrom that croton-chloral-hydrate has the property of inducing profound narcosis of the brain without interfering with the other organs; while a correspondingly deep narcosis produced by chloral is accompanied by general anæsthesia and by dangerous lowering of the heart's action. *If this is not the way to produce degeneracy of race, what can do it?* (*See Chloroform and Ether, Index.*)

CHLORAL IN BEER.

THE *British Medical Journal* discusses a letter which Baron Liebig lately wrote to a friend in London, in which he stated, as a matter of interest, the quantity of chloral that a certain manufacturer turns out weekly. The amount appeared surprisingly great; and the professor added, as a possible explanation, "Some say it gets into our beer." He probably did not expect that his familiar friend would publish this morsel of unauthenticated gossip. A non-professional journal reads the great German chemist's remarks, and from small beginnings, the idea has taken shape, and has been extensively repeated in the press in a more or less authoritative form. Dr. Oscar Riebrich, the discoverer of chloral as a medical agent, has made a communication to our Berlin correspondent on this subject. He states that there is no ground whatever to suppose that the drug is employed to adulterate beer, and that the public may be at once disabused of this notion. The strong bad taste of the drug fortunately disqualifies it for this nefarious use, and its soporific effects upon the constitution are such as to make it totally unadapted to counterfeit the qualities of genuine beer. The presumed enormous demand for chloral has been authoritatively explained on the ground that the "newest popular vice is to take chloral." Ladies, it has been announced, are especially addicted to it, and it is doing at least as much harm as our old enemy alcohol. The drug is kept in thousands of dressing-cases, and those who begin its use often grow so addicted to it that they pass their lives in a sort of contented stupefaction. One seems to find here evidence to the facile power of generalisation that writers devoted to social philosophy possess in an eminent degree. If, indeed, so vast a body of women possessing dressing-cases have, within a year or two, come to pass their lives in a sort of contented stupefaction, so astounding a consummation has been brought about without attracting the notice that it calls for. It is just possible that husbands and fathers are so pleased with the contentment and the stupefaction of the ladies that they have held their peace. In the meantime it may be well to remember that chloral is used medically, under skilled observation, in the same cases continuously from day to day, and often for periods of weeks and months together, without injury, and the aggregate of all those doses represents a very considerable amount. There are at present no data which indicate its use for other than medical purposes. Such a use would be highly dangerous, and the statements which have been circulated affirming it to exist are mischievous.

How thousands of human beings are destroyed by persons swallowing compounds prescribed without knowing what they are taking. Peoples' lives, who take medicine, are at the mercy of any druggist's assistants.

SERIOUS CHARGE AGAINST A CHEMIST'S ASSISTANT.—Yesterday morning Robert Webber, a chemist's assistant, was charged before a full bench of magistrates at Sidmouth with the manslaughter of Mr. William Ellis Wall, on

the 22nd of July last. The deceased, who was in the habit of taking composing draughts, and writing his own prescriptions, sent for a draught which was to have contained half a grain of solution of morphia; but in dispensing the prescription, the prisoner placed therein by mistake one scruple of muriate of morphia. The draught was administered by the wife of deceased immediately after its arrival, and a short time afterwards a messenger arrived to say that a mistake had been made, and, almost simultaneously, a medical gentleman also arrived. Notwithstanding every effort to restore animation, the mixture proved fatal. The magistrates, after a short consultation, committed the prisoner for trial at the next assizes, but admitted him to bail. A verdict of "Death by Misadventure" was returned at the inquest on the 25th of July last.

SAD CASE OF LEGALISED POISONING.

AN inquest was held a day or two ago by Mr. Kemm, coroner, at Elm Grove, Chippenham, the residence of Mr. R. N. Fowler, M.P, touching the death of Mr. Fowler's daughter, Harriet Maria, a child nine years of age. Mr. Goldney, M.P., was foreman of the jury. Mr. Keary, solicitor, of Corsham, attended to watch the proceedings on behalf of Mr. Fowler, and Dr. E. M. Meeres, of Melksham, under whose care the deceased had been placed, was also in attendance. Elizabeth Saturley, nurse, said that on Friday, the 1st instant, the deceased died at about a quarter to eight in the morning. On Monday, the 21st August, witness had taken her to Dr. Meeres, at Melksham, to have her head examined. He said she had ringworm, and gave her a lotion to wash the head with twice a day, and some medicine. She applied the lotion, and gave the medicine as directed. Dr. Meeres called on the following Wednesday, and ordered the head to be shaved, which was done the following day, and the lotion and medicine were continued as before. On Monday, the 28th, Dr. Meeres saw deceased at the house, and said witness was to have her head washed, and to take her to him at Melksham in the afternoon, and he would put an application to the head which he hoped would kill the disease at once. She took deceased to Dr. Meeres' house, and he applied a liquid from a bottle with a small brush, and cautioned the deceased not to open her eyes. He said if a little ran down her neck it did not matter. Some of the liquid ran down the neck behind the ear. The application gave the deceased no pain at the time. Witness brought her home in an open dog-cart almost immediately. During the journey she suffered great pain, and she appeared in great pain after reaching home. Witness applied cold cream and cold water to her face, but did nothing more until Dr. Meeres had seen her again the same evening. He seemed surprised to see how much the head and face were swollen in so short a time. Deceased continued in great pain all night. The next morning they sent for Dr. Meeres, and he ordered cold water pads to be applied over the eyes and forehead. He was asked if there was any danger, and he assured them there was not Deceased still got worse, and they told Dr. Meeres they should have further advice. They telegraphed for Mr. Gore, of Bath. Mr. Gore and Dr. Meeres saw deceased together about five o'clock in the afternoon on that day. The swelling continued to get worse, and deceased got no sleep on the Tuesday. She was constantly inclined to be sick, and took no food on Wednesday. The head began to blister the same evening as the lotion was applied. Mr. Gore ordered tepid water pads to be applied. On Wednesday evening Dr. Meeres gave deceased a composing draught about five o'clock, and about ten o'clock witness gave her another. The deceased slept about two hours that night. All day Thursday seemed very drowsy, and also on Thursday night. About a quarter to eight on Friday morning she died. On being cross-examined by Dr. Meeres as to whether he seemed surprised when he came, witness said he did. Witness also said he made use of the expression, "He did not care about the liquid running down the neck." The mouth was very much swollen, which prevented deceased taking

any solid food. Her lips were also swollen. She could swallow liquids. After Mr. Gore's visit some other medicines were ordered, which she took. Mr. R. T. Gore, of Bath, said that he saw deceased first between five and six o'clock on the afternoon of Tuesday, August 29th, in company with Dr. Meeres. The head and face were a good deal swollen, and there were remains of blisters on the head and on the neck. There were also some spots on the head and face, apparently the remains of an eruptive complaint. The gums were somewhat swollen and tender. Dr. Meeres told him to what circumstances the appearances were to be attributed, viz., that he had applied a strong lotion of corrosive sublimate on the day previous. Witness said he rather regretted the strength of the application he had made, as from experience he knew such applications were not free from danger. He did not see deceased again alive, as he was from home on Friday when sent for. From the blistered state of the head when he saw it, it was impossible to distinguish the exact nature of the eruption. He thought the swelling of the mouth and head, and the general symptoms, were undoubtedly occasioned by the application, and were the effects of an over-strong application of such a remedy. He considered that the corrosive sublimate used was undoubtedly the cause of death. The formula was taken from Dr. Tilbury Fox's work on "Skin Diseases." After clearing the room, the jury unanimously concurred in the following verdict: "That the said Harriet Maria Fowler came to her death on the 1st day of September instant from the effects of poison, caused by a very strong preparation of bichloride of mercury having been applied to her head and neck of the deceased by Dr. Edward Evan Meeres, on the 28th of August last past, whilst under his care for an eruption on the head; and the jury are of opinion that great blame attaches to the said Edward Evan Meeres." The coroner and jury expressed their condolence with Mr. and Mrs. Fowler on the melancholy occurrence.

RIBER HALL, THE PROPERTY AND RESIDENCE OF MR. GEORGE ALLEN.

THE FOLLY AND MISCHIEF OF USING PURGATIVE MEDICINES.

BY A MEMBER OF THE ROYAL COLLEGE OF SURGEONS.

Oh dear, man's bowels! What a trouble his bowels are! What an oversight of omniscience to have made man in such a way that he cannot get through life without being plagued by his bowels! And that his palate, that apt appreciator of delicate flavour, should often be compelled most unwillingly to submit to be irritated and annoyed by disgusting compounds to regulate his bowels. Surely prescience and omniscience might have constructed man's frame that poor mortality could have passed through the world without the fearful probability of having life cut short unless he attend everlastingly to his bowels. Oh dear, man's bowels! What a bother his bowels are!

Such has probably been the reasoning of many an invalid who, taught by the therapeutics of the old school of medicine to irritate his stomach by nauseous drugs, finds, alas, to his disappointment, that his bowels, though drugged, are irregular still; and that the object in view when submitting to drug action is as far from being attained as before its application. What folly to go on then!

Still, if this unfortunate being can thoroughly believe the absurd and fast waning dogmas of medical teaching, he must be satisfied that he cannot more profitably employ either his money or his time than in daily attempts to regulate his bowels. Yet, so abominably capricious are those bowels, that if worked to-day by allopathic physic, it is a thousand to one that those obstinate and rebellious constituents of humanity will not wickedly, contumaciously, and as it were derisively, refuse to move on to-morrow, unless by having repeated a still stronger dose of some allopathic panacea for every ill—an aperient or purge. But it is a fact well known, that if we take from a practitioner of the old school of medicine, *his purges, his lancets, and health-murdering mercury, we take from his art the chief means on which he can rely;* for of specific medicine, in its limited or more extended meaning, the allopathic practitioner is contented to know nothing. Hence his anxiety to retain as long as possible every stronghold he possesses over people's credulity. If he doubt the necessity for improvement in his calling, let him read the following testimony to its want from the greatest and best of European surgeons, the late Sir Astley Cooper.

Lecturing to the students of Guy's Hospital, he said:—"The treatment of disease is founded on two principles, namely, diminishing inflammation and producing a change in the action of the part. But let me observe to you that no greater folly or cruelty can be committed than that of giving mercury to effect this end. It is lamentable to reflect on the number of lives that must have been destroyed by phthisis and otherwise, in consequence of the imprudent exhibition of mercury. Look, gentlemen, at 100 patients who come into the Hospital with syphilis, &c. What is the miserable treatment of these patients? You are aware that I scarcely ever enter those wards of the Hospital. I will tell you why I do not enter them. I abstain from entering them because patients are compelled to undergo so infamous a system of treatment, that I cannot bear to witness it. To compel an unfortunate patient to undergo a course of mercury for disease which does not require it, is a proceeding that reflects disgrace and dishonour on the character of a medical institution. No consideration shall induce me to repress my feelings; and I do say that the present treatment of patients is infamous and disgraceful, for their health, perhaps, is irremediably destroyed."

Yet this salivating process, which Sir Astley described with such feelings of horror, is still pursued by the medical profession. Is it not, then, time that patients should look to the subject for themselves, and force practitioners to adopt a better mode? Let them think for a moment, what has given to the world the philosophy of those sages whom society recognises as her greatest worthies but the inborn desire which those sages possessed of seeking to make human know-

ledge perfect, and then, as a consequence, *if mankind have the power or the wisdom to apply it*—human happiness greater.

The allopathic practitioner tries to persuade us that purgation is the condition that nature suggests, and has instituted to remove constipation. But it is not so. Further acquaintance with the subject will teach him that it is not. Nature is uniform in all her actions, and her laws are as unchangeable as those of the Medes. She never antidotes one condition of system to make by doing so that condition worse. If she do it at all, she does it to make it better. But purgation by drastic drugs, though it removes constipation for a time, invariably makes that costive condition more confirmed than before. Seeing this to be the case, the practitioners of homœopathy and hydropathy endeavour to show the people who have so long been misled by the malpractice of the mischievous old school, the evils that result from allopathic treatment, and the irrational basis on which it is founded. Foremost amongst these is the habit of giving drastic drugs to empty the bowels for every kind of ailment, and often for no ailment at all; but merely because the bowels are more confined than the faith of old physic imagines to be right.

Costiveness, it should be known, is not of itself a disease; but the result of an altered state, morbid or not, going on in the system. It accompanies diseases, and comes on in their progress, and may, or it may not, require medical interference. When it does require treatment, there are other indications to render it necessary. But that treatment does not consist in giving purgative medicines.

Purgatives, as is well known, have a specific action on particular parts of the intestinal channel. Thus, some act specially on the small intestines, while others expend the greater part of their power on the larger bowels. It is this specific action that often increases so much their injurious results. Let us hear the evidence of an eminent allopathic authority on the action of purgatives:—"One of our important steps has been to discover upon what particular portion of the intestinal canal, upon what tissues, and in what manner, each purgative medicine acts. It is not sufficient for us to know that the bowels are opened by one of these agents: we must be aware of the influence each produces. Thus magnesia, than which nothing is considered more simple, has been productive of fatal consequences from the ignorance with which it has been given. Masses of it, unchanged, have been found closely connected together in the bowels, or patches of the powder adhering with the utmost pertinacity to the coats of the intestines. After taking manna, particularly if much vegetable food has been eaten, dyspepsia of a most aggravated character is apt to occur, more especially in children; the quantity of flatulence produced has been a fearful evil, and the consequences alarming. Castor oil, if given under improper circumstances, will not only occasion excruciating tormina, but will be the cause of the expulsion of the mucus which lubricates and defends the bowels from injury. Many individuals have had to repent the folly of taking the different neutral salts. Diarrhœas, dysentery, and dropsy, have supervened upon their use. Gamboge is, of all others, the most uncertain, and oftentimes the most pernicious. Its influence is principally exerted on the muscular fibre, and it is a most energetic engine of mischief. It has been known to produce intussusception, and in some of those instances that have come before the public of death produced by the violent action of pills on the intestinal canal, this drug has decidedly been the means employed. The good sense of the public has taught it to give up the constant employment of aloes, once the basis of every aperient pill, and gamboge, which is infinitely more pernicious, has been substituted; but of the two evils, the hœmorrhoids produced by aloes are infinitely preferable to the disease, and even to the death, consequent on the use of the other." Even senna, which certainly comes nearer to a harmless domestic remedy than any other, is not so if given alone. It is not only a momentary cause of griping and of inconvenience, but it leaves behind it a very great tendency to those uncomfortable sensations, and more particularly if the liver has not been previously called into some slightly increased action. Indeed, a catalogue of sorrows occasioned by the indiscriminate and foolish use of purgatives might easily be drawn up; but such is the headstrong tendency of some individuals to

doctor themselves, that it would be rather a curious than a useful task to undertake it."—*Sigmond on Materia Medica.*

Such is the testimony to the value of his own system of treatment of an eminent allopathic physician—for bear in mind that without purgatives, and without mercury, an allopathic practitioner is as powerless as a child.

That we may fully comprehend the tendency of the mischievous habit of taking purgative medicine, it will be well to take a brief survey of the anatomy and function of the digestive apparatus. We shall then see more clearly how such a habit interferes with the process of nutrition, the very function on which health and strength so pre-eminently depend.

All animal bodies, being liable to waste, must have their substance renewed by the digestion and conversion into nourishment of extraneous substances that contain the elements of which such animal bodies are composed. So long as this renewal of substance goes on, and is unimpaired by the imbibition of deleterious substance, the body remains in health. But stop it, or divert it, and the body loses strength, and ultimately dies. So important is nutrition, that nature's greatest efforts have been directed to maintain it. With a prescience beyond our power of comprehension, she has provided an apparatus so admirably suited to the end desired, that one is lost in astonishment at the foresight of Him who could so admirably design it.

The entire length of the human digestive apparatus and bowels is from five to six times the length of the body. Thus an individual whose height is six feet, would have an intestinal channel of some thirty feet in length. This is an important fact in connection with its function; for it is impossible to conceive that nature, fond of simplicity in all her works, would have formed such a lengthy and complicated apparatus, if the entire evacuation of its contents were to be so often required. If frequent evacuation had been part of her plan for the preservation of the economy, it is believed she would have made a shorter and more simple apparatus.

To prepare the food for the process of digestion, nature has supplied the mouth with teeth, and added very powerful muscles to the jaws to enable the teeth to act. As an inducement to prolong the action of the teeth upon the food, and so prepare it better for the next part of the process of digestion, she has abundantly supplied the *tongue* with nerves. These nerves are so sensitive to impressions, and so rapid in their agency to convey impressions to the *brain*, that man is tempted to continue the action of the teeth on the food, in order to prolong the enjoyment of the sensations produced on the tongue and palate. Thus nature holds out to man an inducement to commence the nutrition of his system rightly.

The masticated food having passed into the stomach, undergoes there the process of maceration. The stomach detains it for a variable period, generally of some hours' duration, till having become pulpified by the united action of moisture and of heat, it passes on to the duodenum, or first part of the intestines, where, being blended with the bile from the liver, the mass is totally changed in its nature and its uses, and has a portion of its substance fit to be received into the circulating medium.

For anatomical purposes the intestines are divided into two parts called the large and the small intestines. The small intestines have their origin from the right or pyloric end of the stomach, and, after making numerous convolutions, end at last at the commencement of the large bowels, which for our present purpose it will be sufficiently accurate to say begin immediately above the right groin. From this part of the abdomen the large intestines pass upwards to the ribs, thence in a curvilinear direction across the body and downwards on the left side of the back-bone to their termination.

The digested food having passed from the stomach to the small intestines, the mass is continued slowly onward by a kind of undulating action of the bowels. Here it is worthy of remark, for it gives immense weight to the opinion broached, that nature has provided most efficient means in the inside of the intestines to *prevent* the frequent evacuation of their contents. These means consist of broad folds of membrane stretching from the circumference to the centre of the bowels

like valves or ridges, with the evident object of impeding the passage of the intestinal contents. Is it possible nature would have placed those ridges there, if frequent evacuation had been part of her design? No. It would be just as sensible to clear the course for a race, and then with wagons to barricade it across. Moreover, these valves or ridges, as they are called, are thickly studded with small absorbent vessels, the function of which is to extract from the digested food every particle of nourishment the food contains. But how should they do that, if the food have to pass at a rattling gallop over their closed extremities? Yet allopathic practitioners give purgatives expressly to expel this food. Nature says plainly, "Let it remain." They, on the contrary, put nature at defiance and eject it all. Nature exclaims to them, "Nourish the body." Their cry is "Reduce it; cut off the supplies; starve, weaken, and exhaust it." They do this, and call themselves *men of science!* They don't assert the alternative that then nature must be a fool. But one or other *must* be wrong. Let the reader and common sense decide whether it be nature or the doctors.

As the digested food passes slowly along the alimentary canal, it is exposed to the action of innumerable vessels. These vessels, extracting a milk-like fluid from the digested mass, are named from this function lacteals, and, uniting afterwards into a common trunk, pass along the inner surface of the spine to the upper part of the chest. This trunk, or thoracic duct, as it is called, empties itself into the left subclavian vein, a little behind and below the collar bone. Mixing itself with the blood, the conveyed fluid passes on to the *right* side of the heart, the heart being a double organ. From the right side of the heart it is sent to the lungs, to undergo the process of conversion into purified blood. Returning from the lungs to the *left* side of the heart, the fluid which we have just seen obtained from the digested food in the intestines has become healthy blood, and is fit for distribution over, and for the nourishment of the body.

Talk of the perfectibility of machinery, and its adaptability to human wants!—why, the mightiest efforts of man's constructive skill sink to the very zero of insignificant nothingness, when compared to this series of acts of prescient thought for the nourishment of the body. Let any rational being, too, ask himself the question if a process like this is to be rashly interfered with by the exhibition of purgatives. Nature has used every possible means to make the processes of digestion and nutrition gradual and sure. Yet medical men and empirics thoughtlessly give highly irritating drugs, which put a stop by their action to the very process that nature has taken so much pains to perfect, and to insure which she has given man an apparatus most wonderful in construction, and beautifully adapted to the function assigned it.

Those who know anything of medical literature know that there was no more devoted enthusiast to the doctrine of cerebral inflammation as the cause of fever and insanity than the late Dr. Clutterbuck. Every one also knows that no allopathic practitioner could undertake the treatment of fever with the slightest chance of success, if deprived of the use of purgative medicines. It may not, therefore, be amiss to see what the extensive experience of Dr. Clutterbuck taught him was the frequent result of the exhibition of purgatives. He says:—"The object in acting upon the intestinal canal, or as we call it producing purging, is the supposition that something noxious is to be carried off, upon the retention of which disease depends. This notion appears to have been entertained in all ages; and accordingly no class of remedies has been in such constant use as that of purgatives. At the present day the *stools* are scrutinised with a degree of minuteness that is quite ridiculous, as if the whole *ars medendi* were confined to the night-stool. Now, nine times in ten, the changes observed in the alvine discharges are the *effect* and not the *cause* of the disease. *On many occasions the changes observed in the state of the evacuations are the result of the very means employed to produce them,* and thus lead to improper practice. I might instance this in the case of children, in the healthiest of whom the doses of *calomel* and *scammony* ordinarily prescribed will at any time produce the most unnatural and offensive discharges."

TEETOTAL STATISTICS.

Charles XII. of Sweden used no intoxicating drinks; and the same was true of the defender of Gibraltar, General Elliot, afterwards Lord Heathfield. It is recorded of the Emperor Napoleon ("Family Library," vol. ii., p. 246): "The labour he underwent at this period, when he was consolidating the administration throughout France, excited the astonishment of all who had access to his privacy. He exhausted the energies of secretary after secretary, and seemed hardly to feel the want of sleep; yet he sustained the unparalleled fatigue without having recourse to any stimulant stronger than lemonade." Napoleon's great rival, the Duke of Wellington, was accustomed to a very careful diet, and took but little wine for years preceding his death. The gallant General Bem was urged at the close of life to take a little wine. "Not a drop," he said; "there are things enough in the world to send the blood to the head without strong drink." Baron Larry, the eminent French surgeon under Napoleon, states that in the retreat from Moscow those soldiers who indulged in ardent spirits first fell victims to the cold; and the Count de Linehulle, one of the few officers who survived, ascribed his escape to his having drank water and not spirits during that disastrous march. Marshal Grouchy ascribed his escape to his use of coffee instead of spirits. The illustrious Havelock took a warm interest in the promotion of temperance among the English soldiers in India from the time when he was a captain in the 13th Light Infantry. In his "Narrative of the War in Affghanistan," he relates the noble conduct of the troops engaged in the storming of Ghuznee, which he states may in "a great degree be attributed to the fact of the European soldiers having received no spirit ration since the 8th of July (the place was captured on the 23rd), and having found no intoxicating liquor among the plunder of Ghuznee. Since then it has been found that troops can make forced marches of fifty miles, and storm a fortress in seventy-five minutes, without the aid of rum, behaving after success with a forbearance and humanity unparalleled in history. Let it not henceforth be argued that distilled spirits are an indispensable portion of a soldier's ration." Havelock continued to maintain his temperance principles, and though in the advance upon Cawnpore he ordered porter to be served to the troops after an exhausting march and long fast, and in the presence of a numerous foe, the circumstances were exceedingly peculiar, and the issue of the experiment was so little satisfactory that the order was not renewed. General Sir W. F. Williams, the hero of Kars, said, in a letter to the "Sons of Temperance," Nova Scotia, "I am indebted to a gracious Providence for preservation in very unhealthy climates; but I am satisfied that a resolution early formed, and steadily persevered in, never to take spirituous liquors, has been a means of my escaping diseases by which multitudes have fallen around me. Had not the Turkish army of Kars been literally 'a cold water army,' I am persuaded they would never have performed the achievements which crowned them with glory." During the Crimean war the advantages of total abstinence were very conspicuous when practised. Colonel Dacres, who was in charge of the English artillery (now General Sir Richard Dacres), in writing from the camp, January 17, 1855, said, "Since I have become a teetotaler I have gone through great fatigues in hot climates. I have crossed the Atlantic, come here, been exposed to disease and *some* discomfort (not much, from my rank and situation), and I have never been sick or had even a short attack of diarrhœa. I ascribe this to water; but, mind, I am a temperate eater also; I never eat animal food more than once a day; no lunch but a piece of biscuit; am a very early man. Now all these things combined enable me to do as much work at fifty-five as many men ten or fifteen years younger. What I began with, as an example, I now continue, as I consider I am much better without wine, beer, &c., both in a religious and worldly point of view; and I shall continue as I am, please God, to my life's end." General Lewis Cass, of the United States, said, "The more active portion of my life was passed in a country on the very verge of civilisation, and much of it beyond, and I have had my full share of exposures, exertions, privations, in peace and in war. I have had, too, my full share of health. I might almost say that I have enjoyed uninterrupted health;

and I am, therefore, a living proof that ardent spirits are not necessary for physical endurance under any circumstances of toil and trial. It was this conviction which led me, when Secretary of War, to authorise the commutation of the ration of ardent spirits, previously issued to the troops, for the equivalent in coffee and sugar." During the sanguinary war between the Federal and Confederate armies (1861-65), some of the ablest commanders on both sides were those who carried the temperance principle most rigidly out by precept and example, as, for ins ance, Stonewall Jackson and General Stuart among the Confederates, and General Howard among the Federals. The exclusion of liquor from the camps was found indispensable to sobriety, discipline, and military success.

DECLARATION OF THE MEDICAL PROFESSION ABOUT ALCOHOL.

A VERY important manifesto in regard to the use of alcohol in different forms, and especially for medicinal purposes, has been drawn up and signed by the leading men of the medical profession. This manifesto is intended to strengthen the hands of the Government in any attempt they may be disposed to make to restrict the sale of intoxicating beverages within stricter limits. The declaration runs as follows:—

"As it is believed that the inconsiderate prescription of large quantities of alcoholic liquids by medical men for their patients has given rise, in many instances, to the formation of intemperate habits, the undersigned, while unable to abandon the use of alcohol in the treatment of certain cases of disease, are yet of opinion that no medical practitioner should prescribe it without a sense of grave responsibility. They believe that alcohol, in whatever form, should be prescribed with as much care as any powerful drug, and that the directions for its use should be so framed as not to be interpreted into a sanction for excess, or necessarily for the continuance of its use when the occasion is past.

"They are also of opinion that many people immensely exaggerate the value of alcohol as an article of diet; and since no class of men see so much of its ill effects, and possess such power to restrain its abuse, as members of their own profession, they hold that every medical practitioner is bound to exert his utmost influence to inculcate habits of great moderation in the use of alcoholic liquids.

"Being also firmly convinced that the great amount of drinking of alcoholic liquors among the working classes of this country is one of the greatest evils of the day, destroying—more than anything else—the health, happiness, and welfare of those classes, and neutralising, to a large extent, the great industrial prosperity which Providence has placed within the reach of this nation, the undersigned would gladly support any wise legislation which would tend to restrict, within proper limits, the use of alcoholic beverages, and gradually introduce habits of temperance."

The document is signed by about 300 of the most eminent physicians and surgeons of London, including the Presidents of the Colleges of Physicians and Surgeons; Sir Thomas Watson, Sir Henry Holland, Sir W. Ferguson, Sir James Paget, Mr. Cæsar Hawkins, F.R.S., the Director-General of the Army Medical Department, Sir J. Ranald Martin, C.B., F.R.S., the heads of the various branches in the medical department of the army, the Netley School, &c.

The immediate effect desired by the memorialists is no doubt an increased caution on the part of medical men in the prescription of alcohol, so that the public shall have no ground for saying that the free use of alcohol by doctors is a premium to intemperance.

To the Editor of the Times.

SIR,—I am sorry that my friend Mr. Skey has set himself against so good a movement as that which a large number of the medical profession has now at

heart in endeavouring to counteract the evils of intemperance, but I am more grieved to find that he offers a lecture to the public on the value of alcohol as a medicine, and brings to his aid the name of the late Dr. Todd. The columns of the public press are not the place to discuss the merits of wine or spirits, since every medical man is aware of their value; but I think it a duty to warn your readers against the supposition that Dr. Todd's was accepted by the profession. Many, like myself, believe the treatment which he recommended to have been most pernicious, and even his own pupils have informed me that he was much mistaken in his assumed facts.

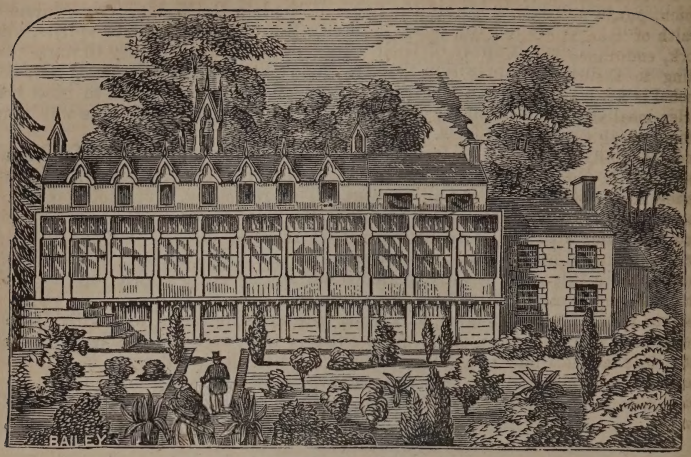
Mr. Skey's therapeutic formula is striking for its simplicity. All diseases have their origin in debility; wine and brandy strengthen; therefore wine and brandy are the remedies for all diseases. This reasoning, I am sorry to say, is too often put in practice. Dr. Todd himself seemed to act on some such theory, and even went so far as to maintain that in some diseases—as, for instance, fevers—alcohol was an antidote, and would arrest their course. He was utterly mistaken in this view, as all experience has subsequently shown; and as to the necessity of stimulants in fever, I will merely state that in my own wards in Guy's Hospital I treat fever, as a rule, without stimulants, and with the best results. Never, perhaps, is Mr. Skey's theory more injuriously acted upon than at the present time, when bronchitis is so prevalent. We are called to see persons breathless, livid in the face, the whole system being gorged with blood which cannot circulate, and, forsooth, because as a necessary consequence the wrist pulse is weak, alcohol is administered. Many thus are killed whom our forefathers would have saved by the lancet.

There has, indeed, been a considerably increasing reaction against Dr. Todd's teaching, attended with the happiest results, and I demur entirely to Mr. Skey's doctrine that all diseases depend on debility and require supporting remedies. If any do require alcohol, it should be given with the same care and judgment as any other drug, such as iron or quinine. It is this reaction against the unfortunate belief that all diseases originate in debility, and therefore that patients must be "kept up," which has instigated so numerous a body of the profession to sign the declaration. Mr. Skey has stated the case against which we protest.—I am, Sir, your obedient servant,

SAMUEL WILKS, M.D., F.R.S.,
Physician to Guy's Hospital.

77, *Grosvenor Street, Grosvenor Square, W., Jan.* 8.

A rich wine merchant in London, noted for the quality and flavour of his wines, by which he had accumulated a large fortune at the beginning of this century, on his deathbed was in agony of mind, exclaiming he had poisoned his best customers to make his fortune. And so mankind are still poisoned by drinks and drugs, but the generality of people are too senseless and prejudiced in favour of custom and what they like, to perceive how absurd it is to swallow compounds they know nothing of until they have produced disease and misery. Port and sherry wine, the far-famed, and as is supposed wholesome beverages, are *fortified* with 40 per cent. of brandy, and mostly bad fiery spirit—the effects on the delicate mucous membranes of the stomach and whole digestive organs may be easily imagined, yet people go on drinking it. The following article is from a source not connected, or in favour of the Anti-Liquor traffic, therefore should have weight:—



SECOND ENLARGEMENT OF INSTITUTE.

(*The most recent discovery on the subject.*)

THE PHYSIOLOGICAL POSITION OF ALCOHOL.

By Dr. Richardson, F.R.S.

(*From the* Popular Science Review, *April*, 1872.)

At the present moment the "Alcohol Question," as it is called, is, in various ways, one of the most anxious subjects of outdoor controversy. The leaders of the temperance movement, seeing the tide that was once against them hesitating, if not turning in their favour, are redoubling their efforts with a certain improvement of method which bodes better for them and their works: the politicians are beginning to consider the solution of the problem of the successful management, by Act of Parliament, of the "habitual drunkard:" the statistician is recollecting and revising his tables on the influence of alcohol upon the health, wealth, and the vitality of communities: the actuary is learning that, with an advance of temperance, his calculations may require amendment: the people resident in quiet and respectable villages, or in sections of great cities and towns, are silently but surely conspiring against that old institution, the public hostel, and that older of institutions still, "mine host" of the hostel: the chemists are busy with their analyses of wines, beer, and spirits, and are charged with subtle arguments on the question whether the animal body, by its living force, can turn alcohol into new and different products of the organic series: and lastly, but by no means leastly, the doctors are making clean breasts on the subject of their dealings with alcohol in the sick room, in a strain which partakes rather of sentiment than reality, or of that serene judgment and reflection so becoming to the professional mind. In the midst of this singular revolution of thought and of revelation of fact against the use of alcohol, it is, I had almost said, appalling to observe how its use extends. What is protest in theory is met by counter-protest in practice. Is theory or practice false? That is the question.

The answer I shall try herewith to give to that question shall consist of fact and suggestion. I have no part in mere controversy. I have tried by experiment and experience to read the physiological action of alcohol, and the reading thus obtained I

propose to put forward in this brief chronicle. Let the reader, if he choose, take up the controversy from the narrative.

I would deal now with one part of the science side of the alcohol question, and which, put in very simple language, would stand as follows: Is alcohol good for the health of man and the lower animals? Does it give them strength, readiness for work, endurance for work, length of days, happiness? To answer the question relating to the lower animals first, we may, I think, come to the safe conclusion that alcohol is not good for animals under the rank of man. Calves fed on gin-balls—barley-meal and gin—are very soon prepared for the *abattoir*, but are not exalted into anything very sprightly and lovely in the bovine line. On the contrary, they are rendered dull, slothful, sleepy calves, on whose bodies the advice "Rest and be thankful" is morally branded. Cats and kittens are equaliy deteriorated by alcohol. I knew some young people who gradually taught a favourite kitten to walk round the dinner-table during dessert and taste wine. It was not long before the taste became a luxurious habit with the animal, but she soon began to fail under it. She slept half her life, lost all desire for play, and in the course of a month or two was dropsical and beyond cure. She contracted the liver disease called cirrhosis, and a very perfect specimen of the disorder she presented after her untimely death. I have observed that birds can be made to acquire a taste for alcohol. Pigeons and fowls, after a little training, will pick up peas saturated with spirits, and subsist on such diet. The animals fatten and sleep, but they lose their vivacity, and certainly lose their muscular power. The same rule holds good with fish. These animals, under the feeble but steady influence of alcohol, become indolent and sleepy and soon die.

On the whole, then, we may conclude safely that the god Bacchus meant wine and all its allies specially for man. Perhaps he foresaw that it would be too expensive an article for beasts generally, and so wisely limited its adaptation; or perhaps he did not adapt it wisely for the good of man, since, according to the best accounts of him from those his votaries who believe in him, he was not a personage who went deeply into any other subject than wine. Was he wise, and is alcohol, bad for beasts, good for man? We will turn to this question.

It is right, before entering on this question, to say that under the word alcohol I mean specifically the alcohol which ordinarily enters into wines, beers, spirits, and upon which their action as stimulants depends. There are many other substances included now, by chemists, under the term alcohol, such as methylic, butylic, and amylic alcohols; and there is another singular alcohol called mercaptan, or sulphur alcohol, in which the element sulphur replaces the element oxygen of common alcohol. Certain of these other alcohols—those above named particularly—I have made also, subject of physiological study; and the report of their action would afford scope for an article that could not, I think, fail to be of interest to scientific readers whose tastes lean towards physiological research. But, as it will be simplest to begin with the alcohol that is best known, and for good or for evil is most potent in the world in our time, I confine, on this occasion, myself to it—*ethylic or common alcohol.*

Ethylic alcohol will enter the animal body by any channel through which it can be administered. It may be introduced by the stomach, by the connective tissue beneath the skin, into which it can be readily injected, and by the inhalation of its vapour by the lungs. This last method of administration is, however, the most difficult, the quantity required for the production of an effect being considerable, and the time required very long. The animals most susceptible to the action of alcohol-vapour are pigeons; but even they resist the influence of the vapour so determinately, that the same quantity which would produce a profound effect in half-an-hour, were it injected subcutaneously, exerts no marked influence if administered through the air.

But in whatever mode alcohol may be passed into the living body to produce modification of physiological action, the changes it excites are remarkably uniform, and *cæteris paribus*, the amount required to induce the changes is also uniform. Thus, I have found, by many researches, that the proportion of sixty grains of alcohol to the

pound weight of the animal body is the quantity capable of producing an extreme effect.

The order of the changes induced is, in like manner, singularly uniform, and extends in a methodical way through all classes of animals that may be subjected to the influence; and as the details of this part of my subject are the facts that concern us most, I shall expend some time in their narration.

The first symptom of moment that attracts attention, after alcohol has commenced to take effect on the animal body, is what may be called vascular excitement: in other words, over-action of the arterial vessels and of the heart, or, speaking still more correctly, over-action of the heart and arterial vessels. The heart beats more quickly, and thereupon the pulse rises. There may be some other symptom of a subjective kind—symptoms felt by the person or animal under the alcohol—but this one symptom of vascular excitement is the first objective symptom, or that which is presented to the observer. I endeavoured in one research to determine from observations on inferior animals what was the actual degree of vascular excitement induced by alcohol, and my results were full of interest. They have, however, been entirely superseded by the observations made on the human subject by Dr. Parkes and Count Wollowicz.

These observers conducted their inquiries on the young and healthy adult man. They counted the beats of the heart, first at regular intervals, during what were called water periods—that is to say, during periods when the subject under observation drank nothing but water; and next, taking still the same subject, they counted the beats of the heart during successive periods in which alcohol was taken in increasing quantities: thus step by step they measured the precise action of alcohol on the heart, and thereby the precise primary influence induced by alcohol. Their results were as follow:—

"The average number of beats of the heart in 24 hours (as calculated from eight observations made in 14 hours) during the first, or water period, was 106,000; in the alcoholic period it was 127,000, or about 21,000 more; and in the brandy period it was 131,000, or 25,000 more.

The highest of the daily means of the pulse observed during the first or water period was 77·5; but on this day two observations are deficient. The next highest daily mean was 77 beats.

If, instead of the mean of the eight days, or 73·57, we compare the mean of this one day, viz., 77 beats per minute, with the alcoholic days, so as to be sure not to over-estimate the action of the alcohol, we find:—

On the 9th day, with one fluid ounce of alcohol, the heart beat 430 times more.

On the 10th day, with two fluid ounces, 1,872 times more.

On the 11th day, with four fluid ounces, 12,960 times more.

On the 12th day, with six fluid ounces, 30,672 times more.

On the 13th day, with eight fluid ounces, 23,904 times more.

On the 14th day, with eight fluid ounces, 25,488 times more.

But as there was ephemeral fever on the 12th day it is right to make a deduction, and to estimate the number of beats in that day as midway between the 11th and 13th days, or 18,432. Accepting this, the mean daily excess of beats during the alcoholic days was 14,492, or an increase of rather more than 13 per cent.

The first day of alcohol gave an excess of 4 per cent., and the last of 23 per cent.; and the mean of these two gives almost the same percentage of excess as the mean of the six days.

Admitting that each beat of the heart was as strong during the alcoholic period as in the water period (and it was really more powerful), the heart on the last two days of alcohol was doing one-fifth more work.

Adopting the lowest estimate which has been given of the daily work done by the heart, viz., as equal to 122 tons lifted one foot, the heart, during the alcoholic period, did daily work in excess equal to lifting 158 tons one foot, and in the last two days did extra work to the amount of 24 tons lifted as far.

The period of rest for the heart was shortened, though, perhaps, not to such an

extent as would be inferred from the number of beats; for each contraction was sooner over. The heart, on the fifth and sixth days after alcohol was left off, and apparently at the time when the last traces of alcohol were eliminated, showed in the sphygmographic tracings signs of unusual feebleness; and, perhaps, in consequence of this, when the brandy quickened the heart again, the tracings showed a more rapid contraction of the ventricles, but less power, than in the alcoholic period. The brandy acted, in fact, on a heart whose nutrition had not been perfectly restored.

It is difficult, at first glance, to realise the excessive amount of work performed by the heart under this extreme excitement. Little wonder is it that, after the labour imposed upon it by six ounces of alcohol, the heart should flag; still less wonder that the brain and muscles, which depend upon the heart for their blood supply, should be languid for many hours, and should require the rest of long sleep for renovation.

It is hard physical work, in short, to fight against alcohol; harder than rowing, walking, wrestling, carrying heavy weights, coal-heaving, or the tread-wheel itself.

While the heart is thus labouring under the action of alcoholic stimulation, a change is observable in the extreme circulation—that circulation of blood which by varying shades of colour in exposed parts of the body, such as the cheek, is visible to the eye. The peripheral circulation is quickened, the vessels distended. We see this usually in persons under the influence of wine in the early stage, and we speak of it as the flush produced by wine. The authors I have already quoted report upon it in definite terms. "The peripheral circulation (during alcoholic excitement) was accelerated, and the vessels were enlarged, and the effect was so marked as to show that this is an important influence for good or for evil when alcohol is used."

By common observation the flash seen on the cheek during the first stage of alcoholic excitation is supposed to extend merely to the parts actually seen. It cannot, however, be too forcibly impressed upon the mind of the reader that the condition is universal in the body. If the lungs could be seen, they, too, would be found with their vessels injected; if the brain and spinal cord could be laid open to view, they would be discovered in the same condition; if the stomach, the liver, the spleen, the kidneys, or any other vascular organs or parts could be laid open to the eye, the vascular enlargement would be equally manifest.

In course of time, in persons accustomed to alcohol, the vascular changes, temporary only in the noviciate, become confirmed and permanent. The bloom on the nose which characterises the genial toper is the established sign of alcoholic action on vascular structure

Recently the new physiological inquiries have served to explain the reason why, under alcohol, the heart at first beats so quickly and why the pulses rise. At one time it was imagined that the alcohol acted immediately upon the heart, stimulating it to increased action, and from this idea—false idea, I should say—of the primary action of alcohol, many erroneous conclusions have been drawn. We have now learned that there existed many chemical bodies which acted directly by producing a paralysis of the organic nervous supply of the vessels which constitute the minute vascular circuit. These minute vessels when paralysed offer inefficient resistance to the stroke of the heart, and the heart thus liberated, like the mainspring of a clock from which the resistance has been removed, quickens in action, dilating the minute and feebly-acting vessels, and giving evidence really not of increased but of wasted power.

The phenomena noticed above constitute the first stage of alcoholic action on the body; we may call it the stage of excitement: it corresponds with a similar stage or degree caused by chloroform.

If the action of alcohol be carried further, a new set of changes are induced in another part of the nervous system—the spinal system. Whether this change be due simply to the modification of the circulation in the spinal cord, or to the direct action of the alcohol upon the nervous matter, is not yet known, but the fact of change of function is well marked, and it consists of deficient power of co-ordination of muscular

movement. The nervous control of certain of the muscles is lost, and the nervous stimulus is more or less enfeebled. The muscles of the lower lip in the human subject usually fail first of all, then the muscles of the lower limbs, and it is worthy of remark that the flexor muscles give way earlier than the extensors. The muscles themselves by this time are also failing in power; they respond more feebly than is natural to the galvanic stimulus; they, too, are coming under the depressing influence of the paralysing agent, their structure temporarily changed, and their contractile power everywhere reduced. This modification of the animal functions under alcohol marks the second degree of its action. In this degree, in young subjects, there is usually vomiting, and in birds this symptom is invariable. Under chloroform there is produced a degree or stage of action holding the same place in the order of phenomena.

The influence of the alcohol continued still longer, the upper portions of the cerebral mass, or larger brain, become implicated. These are the centres of thought and volition, and as they become unbalanced and thrown into chaos, the mind loses equilibrium, and the rational part of the nature of the man gives way before the emotional, passional, or mere organic part. The reason now is off duty, or is fooling with duty, and all the mere animal instincts and sentiments are laid atrociously bare. The coward shows up more craven, the braggart more braggart, the bold more bold, the cruel more cruel, the ignorant more ignorant, the untruthful more untruthful, the carnal more carnal. "In vino veritas" expresses faithfully, indeed even to physiological accuracy, a true condition. The spirits of the emotions are all in revel, and are prepared to rattle over each other in wild disorder; foolish sentimentality, extending to tears, grotesque and meaningless laughter, absurd promises and asseverations, inane threats or childish predictions impel the tongue, until at last there is failure of the senses, distortion of the objective realities of life, obscurity, sleep, insensibility, and utter muscular prostration. This constitutes the third stage of alcoholic intoxication. It is the stage of insensibility under chloroform when the surgeon performs his painless task.

While these changes in the action of the nervous system are in progress there is a peculiar modification proceeding in respect to the temperature of the body. For a little time the external or surface temperature is increased, especially in those parts that are unduly charged and flushed with blood. But it is to be observed that in respect to the mass of the body the tendency is to a fall of temperature. In the progress towards complete intoxication under alcohol, however, there are, as we have already seen, three degrees or stages. The first is a stage of simple exhilaration, the second of excitement, the third of rambling insensibility, and the fourth of entire unconsciousness, with muscular prostration. The duration of these stages can be modified in the most remarkable manner by the mode of administration; but whether they are developed or recovered from in an hour or a day, they are always present except in cases were the quanity of alcohol administered is in such excess that life instantly is endangered or destroyed. In the first or exhilarative stage the temperature undergoes a slight increase; in birds a degree Fahrenheit, in mammals half a degree. In the second degree, during which there is vomiting in birds, or attempts at vomiting, the temperature comes back to its natural standard, but soon begins to fall; and during the third degree the decline continues. The third degree fully established, the temperature falls to its first minimum, and in birds comes down from five and a half to six degrees; in rabbits from two and a half to three degrees. In this condition the animal temperature often remains until there are signs of recovery, viz., conscious or semi-conscious movements, upon which there may be a second fall of temperature of two or even three degrees in birds. In this course of recovery I have seen, for instance, the temperature of a pigeon which had a natural standard of 110° Fahr. reduced to 102°. Usually with this depression of force there is a desire for sleep, and with perfect rest in a warm air there is a return of animal heat; but the return is very slow, the space of time required to bring back the natural heat being from three to four times longer than that which was required to reduce it to the minimum.

In these fluctuations of temperature the ordinary influences of the external air play an important part as regards duration of the fluctuation, and to some extent as regards extremes of fluctuation.

These facts respecting the fall of temperature of the animal body under alcohol were derived from observations originally taken from the inferior animals; they have been confirmed since by other observers from the human subject. Dr. De Marmon, of King's Bridge, New York, has specially proved this fact in some instances of poisoning by whisky in young children. In one of these examples the temperature of the body fell from the natural standard of 98° Fahr. to 94°; in another to 93½°.

Through all the three stages noticed in the above, the decline of animal heat is a steadily progressing phenomenon. It is true that in the first stage the heat of the flushed parts of the body is for a brief time raised, but this is due to greater distribution of blood and increased radiation, not to an actual increment of heat within the body. The mass of the body is cooling, in fact, while the surfaces are more briskly radiating, and soon, as the supply of heat-motion fails, there is a fall of surface temperature also; a fall becoming more decided from hour to hour up to the occurrence of the fourth and final stage, of which I have now to treat.

The fourth degree of alcoholic intoxication is one of collapse of the volitional nervous centres, of the muscular organs under the control of those centres, and of some of the organic or mere animal centres. It is true that while the body lies prostrate under alcohol there are observed certain curious movements of the limbs, but these are not stimulated from the centres of volition, nor are they reflected motions derived from any external stimulus; they are strange automatic movements, as if still in the spinal cord there were some life, and they continue irregularly nearly to the end of the chapter, even when the end is death.

Through the whole of this last stage two centres remain longest true to their duty, the centre that calls into play the respiratory action, and the centre that stimulates the heart. There is then an interval during which there are no movements whatever, save these of the diaphragm and the heart, and when these fail the primary failure is in the breathing muscle: to the last the heart continues in action.

The leading peculiarity of the action of alcohol is the slowness with which the two centres that supply the heart and the great respiratory muscle are affected. In this lies the comparative safety of alcohol: acting evenly and slowly, the different systems of organs die after each other, or together, gently, with the exception of those two on which the continuance of mere animal life depends. But for this provision, every deeply intoxicated animal would inevitably die.

It happens usually, nevertheless, that under favourable circumstances the intoxicated live: the temperature of the body sinks two or three degrees lower, but the alcohol diffusing through all the tissues and escaping by diffusion and elimination, the living centres are slowly relieved, and so there is slow return of power. If death actually occurs, the cause of it is condensation of fluid on the bronchial surfaces and arrest of respiration from this purely mechanical cause. The animal is literally drowned in his own secretion.

Such are the stages or degrees of alcoholic narcotism, from the first to the last. And with the description of them, and the order in which they come, my present task is well nigh complete. There arise, however, a few thoughts and suggestions deserving of brief notice.

1. In the first place we gather from the physiological reading of the action of alcohol that the agent is a narcotic. I have compared it throughout to chloroform, and the comparison is good in all respect save one, viz., that alcohol is less fatal than chloroform as an immediate destroyer. It kills certainly in its own way to the extent, according to Dr. De Marmon, of fifty thousand persons a year in England, and ten thousand a year in Russia, but its method of killing is slow, indirect, and by painful disease.

2. The well proven fact that alcohol, when it is taken into the body, reduces the animal temperature, is full of the most important suggestions. The fact shows that

alcohol does not in any sense act as a supplier of vital heat as is so commonly supposed, and that it does not prevent the loss of heat as those imagine "who take just a drop to keep out the cold." It shows, on the contrary, that cold and alcohol in their effects on the body run closely together, an opinion most fully confirmed by the experience of those who live or travel in cold regions of the earth. The experience of the Arctic voyagers, of the leaders of the great Napoleonic campaign in Russia, of the good monks of St. Bernard, all testify that death from cold is accelerated by its ally alcohol. Experiments with alcohol in extreme cold tell the like story, while the chilliness of body which succeeds upon even a moderate excess of alcoholic indulgence leads direct to the same indication of truth.

3. The conclusive evidence now in our possession that alcohol taken into the animal body sets free the heart, so as to cause the excess of motion of which the record has been given above, is proof that the heart, under the frequent influence of alcohol, must undergo deleterious change of structure. It may, indeed, be admitted in proper fairness, that when the heart is passing through this rapid movement it is working under less pressure than when its movements are slow and natural; and this allowance must needs be made or the inference would be that the organ ought to stop at once in function by the excess of strain put upon it. At the same time the excess of motion is unquestionably injurious to the heart and to the body at large: it subjects the body in all its parts to irregularity of supply of blood; it subjects the heart to the same injurious influence; it weakens and, as a necessary sequence, degrades both the body and the heart.

4. Speaking honestly, I cannot, by any argument yet presented to me, admit the alcohols by any sign that should distinguish them from other chemical substances of the exciting and depressing narcotic class. When it is physiologically understood that what is called stimulation or excitement is, in absolute fact, a relaxation, I had nearly said a paralysis, of one of the most important mechanisms in the animal body —the minute, resisting, compensating circulation—we grasp quickly the error in respect to the action of stimulants in which we have been educated, and obtain a clear solution of the well-known experience that all excitement, all passion, leaves, after its departure, lowness of heart, depression of mind, sadness of spirit. We learn, then, in respect to alcohol, that the temporary excitement it produces is at the expense of the animal force, and that the ideas of its being necessary to resort to it, that it may lift up the forces of the animal body into true and firm and even activity, or that it may add something useful to the living tissues, are errors as solemn as they are widely disseminated. In the scientific education of the people no fact is more deserving of special comment than this fact, that excitement is wasted force, the running down of the animal mechanism before it has served out its time of motion.

5. It will be said that alcohol cheers the weary, and that to take a little wine for the stomach's sake is one of those lessons that comes from the deep recesses of human nature. I am not so obstinate as to deny this argument. There are times in the life of man when the heart is so oppressed, when the resistance to its motion is excessive, and when blood flows languidly to the centres of life, nervous and muscular. In these moments alcohol cheers. It lets loose the heart from its oppression, it lets flow a brisker current of blood into the failing organs; it aids nutritive changes, and altogether is of temporary service to man. So far alcohol is good, and if its use could be limited to this one action, this one purpose, it would be amongst the most excellent gifts of nature to mankind. Unhappily, the border line between this use and the abuse of it, the temptation to extend beyond the use, the habit to apply the use when it is not wanted as readily as when it is wanted, overbalance, in the multitude of men, the temporary value that attaches truly to alcohol as a physiological agent. Hence alcohol becomes a dangerous instrument even in the hands of the strong and wise, a murderous instrument in the hands of the foolish and weak. Used too frequently, used too excessively, the agent that in moderation cheers the failing body, relaxes its parts too extremely; spoils vital organs; makes the course of the circulation slow, imperfect, irregular; suggests the call for more stimulation;

tempts to renewal of the evil, and ruins the mechanism of the healthy animal before its hour for ruin, by natural decay, should be at all near.

6. It is assumed by most persons that alcohol gives strength, and we hear feeble persons saying daily that they are being kept up by stimulants. This means actually that they are being kept down, but the sensation they derive from the immediate action of the stimulant deceives them, and leads them to attribute lasting good to what, in the large majority of cases, is persistent evil. The evidence is all-perfect that alcohol gives no potential power to brain or muscle. During the first stage of its action it may enable a wearied or feeble organism to do brisk work for a short time; it may make the mind briefly brilliant; it may excite muscle to quick action, but it does nothing at its own cost, fills up nothing it has destroyed as it leads to destruction. A fire makes a brilliant sight, but it leaves desolation; and thus with alcohol.

7. On the muscular force the very slightest excess of alcoholic influence is injurious. I find by measuring the power of muscle for contraction in the natural state and under alcohol, that so soon as there is a distinct indication of muscular disturbance, there is also indication of muscular failure, and if I wished, by scientific experiment, to spoil for work the most perfect specimen of a working animal, say a horse, without inflicting mechanical injury, I could choose no better agent for the purpose of the experiment than alcohol. But alas! the readiness with which strong, well-built men slip into general paralysis under the continued influence of this false support, attests how unnecessary it were to put a lower animal to the proof of an experiment. The experiment is a custom, and man is the subject.

8. It may be urged that men take alcohol, nevertheless, take it freely, and yet live; that the adult Swede drinks his average cup of twenty-five gallons of alcohol per year and yet remains on the face of the earth. I admit force even in this argument, for I know that under the persistent use of alcohol there is a secondary provision for the continuance of life. In the confirmed alcoholic the alcohol is in a certain sense so disposed of that it fits, as it were, the body for a long season—nay, becomes part of it; and yet it is silently doing its fatal work: all the organs of the body are slowly being brought into a state of adaptation to receive it and to dispose of it; but in that very preparation they are themselves undergoing physical changes tending to the destruction of their function and to perversion of their structure. Thus, the origin of alcoholic phthisis, of cirrhosis of the liver, of degeneration of the kidney, of disease of the membranes of the brain, of disease of the substance of the brain and spinal cord, of degeneration of the heart, and of all those varied modifications of organic parts which the dissector of the human subject so soon learns to observe—almost without concern, and certainly without anything more than commonplace curiosity—as the devastations incident to alcoholic indulgence. Thus, the origin of such a report as that of Mr. Everrett on the census of America in 1860, related by Dr. De Marmon in the *New York Medical Journal* for December, 1870:—

"For the last ten years the use of spirits has—1. Imposed on the nation a direct expense of 600,000,000 dollars. 2. Has caused an indirect expense of 600,000,000 dollars. 3. Has destroyed 300,000 lives. 4. Has sent 100,000 children to the poor-houses. 5. Has committed at least 150,000 people into prisons and workhouses. 6. Has made at least 1,000 insane. 7. Has determined at least 2,000 suicides. 8. Has caused the loss, by fire or violence, of at least 10,000,000 dollars' worth of property. 9. Has made 200,000 widows and 1,000,000 orphans."

When I sat down to write this essay I noted many points of peculiar scientific interest as deserving my attention, and amongst these one specially important, the question:—How alcohol, after it has been taken into the organism, is disposed of, whether by conversion into a new product, by which it ceases to be alcohol, or whether, by leaving the body, as it entered it, an unbroken chemical compound? This question, however important scientifically, is of secondary moment when it is compared with the study of the direct, regular, and almost unvarying action of alcohol upon the body during life, and I have therefore left it in order to place before the mind of my readers the actual influence of alcohol on the body of the animal that takes it, what-

ever may become of it after it has entered the body. If in this effort I have shown how far alcohol is really good, and how such value as there is in it is limited at most to the first stage of its action; if I have shown how, being a so-called stimulant, it is not a giver of power; if I have indicated by what slight error in the use of it it is a destroyer of power of the most potent character; and if, from experimental research on the physiological action of the agent, I have been able to communicate to the world some facts not before rightly understood, my intention is carried out. I hope, moreover, the intention is carried out with benefit to the greatest of all social efforts, the effort to reduce alcohol to its legitimate application as an instrument for some good and most evil in the possession of man.

WINE AND SPIRIT DEALERS AND THEIR ASSISTANTS.

My experience the last twenty-one years of those who have come to our institution, and who had been engaged in the wine and spirit trade, fully corroborates the following statement. It is painful to me to call to mind the distressing wrecks I have seen of men—young and middle-aged, never old—in a hopeless suffering state, not from drunkenness, but from being constantly in the atmosphere of alchohol, and tasting. One very fine-framed, talented young man, the son of a widow, whose support he was, had been employed by a large firm of wine merchants in London as taster; he came to me with chronic disease of the stomach, cancer had commenced, and I sent him home to die an excruciating death, which he did; we could do nothing for him. It is the practice of wine merchants to employ such, but neither master nor servants escape the inexorable law of transgression of nature's laws. I was intimate formerly with a family in which three sons and other members of the family, and not a few of their travellers and assistants, the last forty years, have fallen victims to the trade, yet they were never known to be drunk. Talk of extinction of race, as a learned doctor does, which I quote in this work, here is a whole family swept away, leaving descendants going the same way; yet they are blind to the glaring causes of the deaths of their relations and assistants.

Effects of Alcohol.—At the meeting of the Royal Medical and Chirurgical Society last week, there was read a paper by Dr. Dickenson, of St. Georgs's Hospital, on the effects of alcohol as exemplified in those engaged in its sale, derived from the records of St. George's Hospital, extending over a period of thirty years. What Dr. Dickenson aimed at showing was the effects of alcohol on those who, from their position, might be expected to partake of it freely as compared with the general bulk of the population. He was able to prove that it materially modified the conditions of the body—wounds tended to suppurate, internal organs when irritated to undergo a kind of fibroid change. The lungs were often affected, but still more manifest were nervous symptoms—some due to changes in the arteries of the brain, some to what might be described as alterations in nutrition. In such patients, too, there was a tendency of inflammation in certain parts to end in suppuration: thus, pericarditis ended in purulent effusion, and so did pleurisy. The liver was prone to change, especially to scirrhosis; but, according to the statistics adduced, the kidneys did not suffer in the same proportion. But there is one important feature commonly overlooked, the *Medical Times and Gazette* says, in these and such-like inquiries: that is, the nature and quality of the liquor consumed. Much more depends on these than statistics can show. Where, for instance, is the comparison between good old mellow wine and raw spirits, or between beer of the best Bass or Allsopp tap and that sold in a low beershop? Until these differences can be appreciated by statistics, such papers only tell half their lesson, for it is vain to lay all the evil on the back of alcohol, and none on the other constituents of intoxicating liquors as ordinarily sold."

A Treatise on the Origin, Nature, and Varieties of Wine; being a complete Manual of Viticulture and Œnology. By J. L. W. Thudichum, M.D., and August Dupré, Ph.D., Lecturer on Chemistry at Westminster Hospital. London; Macmillan & Co.

WINE.

(*From the Saturday Review.*)

WHAT to drink would appear to be becoming one of the great questions of the day. Beer is still the national beverage of England, and is gradually supplanting cider in Southern counties and whisky in Ireland and Scotland. But pure beer can hardly be obtained except at a high price and in cask, and the ordinary beer of the public-house is at once nasty and deleterious. The teetotallers, who are anxious to suppress the sale and consumption of all intoxicating liquors, have just been thrown on the defensive by medical attacks on their favourite beverages. The inhabitants of the metropolis are warned that the water supplied for their use is only a saturated solution of sewage matter, teeming with lively organisms; and more recently tea has been denounced as a drink which depresses rather than cheers, and produces results a great deal worse than inebriation. It is asserted that a deterioration of health among the working classes and a lowered vitality in the rising generation may be distinctly traced to the use of tea. In the debate in the House of Commons an advocate of the abolition of the Malt-tax has attributed the frequent baldness of our young men to the same cause. To recommend milk to the working classes is pretty much like proposing pie-crust as a substitute for bread at famine prices. The reduction of the wine duties has made wine popular with the middle classes, but it is beginning to be understood that the cheap light wines which were to regenerate the nation are often by no means light in the sense of purity and wholesomeness, and that their cheapness is too frequently of the kind which is proverbially associated with and accounted for by nastiness. It is impossible to doubt that the increased demand for wine has in the first instance produced an injurious effect on the character of the wines which are sent into the market. The supply of pure wine is not equal to the demand; and the keen competition of the trade and the general ignorance of consumers offer a strong temptation to provide quantity at the expense of quality. The ordinary dealers as well as the public have been overwhelmed by the number and variety of wines now brought into the market. As long as port and sherry were the staple articles of commerce the dealers had certain well-known conventional tastes to guide them; the public knew what it wanted, and, on the whole, probably got what it wanted. But since claret has come into general use, and especially since it has come to be understood that claret is a name of unknown derivation for an immense variety of wines of the most different characters, the public and the dealers are equally at sea. The popular taste for wine is in a transition state, and it is natural perhaps that a good deal of confusion and disappointment should be the result. Most people would be very much indebted to any one who would enlighten them on this subject, who would explain the qualities which render wine wholesome or unwholesome, the causes of these qualities, and the considerations which should be kept in view in the choice of wines for ordinary use. It cannot be said that the literature of œnology is scanty. It is calculated that it embraces some six hundred works, and of these Dr. Thudichum and Dr. Dupré, who have just added another to the series, profess to have read two hundred; but we cannot say that their handsome and imposing volume gives us what we want. We doubt whether it will be found sufficiently precise and comprehensive in all respects for the practical wine-grower or manufacturer, and it is certainly too scientific, or rather too technical—an important distinction—for the ordinary reader, who, after a few pages of dibromosuccinic acid, monobromomalates, basic radical, and the rest of it, will probably find his head begin to spin. Strictly speaking, it seems to us

to be a work on the chemical analysis of French wines. The greater part of the volume is devoted to this subject, and the chapters on other wines are scanty and superficial. The authors have collected a great deal of valuable information by personal visits to the vineyards and by elaborate experiments with regard to the wines of France; and it would have been well if they had confined themselves to a branch of the subject on which they are entitled to speak with some authority. Their observations on Greek, Hungarian, and other wines appear to have been got up at second hand, and to be in some respects prejudiced and inaccurate. The general reader will find all he wants set forth in a more intelligible form in Dr. Druitt's interesting book on cheap wines.

What strikes one most strongly in reading Dr. Thudichum and Dr. Dupré's Treatise, or indeed any other work on the production of wine, is the relentless and almost universal conspiracy against the pure natural juice of the grape into which wine-growers and manufacturers appear to have entered. It is well known that port and sherry are more or less artificial concoctions, the better sorts of which really have genuine port or sherry as an element in their composition; but large quantities of liquor are sold under these names in which there is not a drop of genuine wine. The chief business of the Rousillon vineyards is to supply a wine which is exported into Portugal, to be there doctored into so-called port, and it need hardly be said that the ceremany of a visit to Portugal is not unfrequently omitted. There are also white French wines which are similarly used to a large extent in the manufacture of sherry. There is, of course, such a thing as pure champagne, but it is seldom to be met with, and the ordinary champagne of commerce is notoriously an artificial production. The manufacture of champagne in the region which goes by that name is stated to have increased from five millions of bottles in 1834 to between twenty-five and thirty millions at the present day. But real champagne is grown only in the prefectures of Rheims and Epernay, within a comparatively narrow area; and although it is known that the war must in various ways have seriously interfered with the cultivation of the vineyards, it does not seem to have caused any falling off in the yield of wine. Both Bordeaux and Burgundy wines are also assuming more of an artificial character. Hermitage is now produced chiefly for the purpose of mixing with the colder growths of the Gironde; and Château-Neuf-du-Pape and the Beaujolais wines are almost exclusively used as materials for being mixed and doctored into Burgundy. The wines which are chiefly drunk in France are the *vins du Midi*—cheap natural wines which, though sometimes rather sharp and rough, are a sound, wholesome, genial drink, and mix well with water. But Frenchmen now complain that they can no longer obtain these wines in their natural form, and that they are adulterated in the making in order that they may be mixed up with other wines and passed off at a higher price under some famous name. The doctoring of the common wines with brandy is openly practised on the quays of Bordeaux; and sugar and brandy would seem to be the chief constituents of Burgundy. Dr. Thudichum and Dr. Dupré say that they have seen as much as twenty pounds of sugar to the "piece" added to Bordeaux, and they attribute to this addition much of the fierceness and alcoholicity of this kind of wine, and its injurious effects on those who drink it. A curious instance of the tendency of natural wines to get supplanted by imitations is afforded by the decline of the Muscat wines. It has been discovered that there is a close resemblance between the flavour of Muscat and the flavour of tincture of elder-flower; and a drink is made out of the latter, with the aid of alcohol, sugar, and a little tartaric acid, which is asserted to be in many cases superior in flavour, and "certainly in purity," add our authors, to the true Muscat of Lunel. Hence Muscat has lost its standing. It is with this elder-flower extract that the sparkling Moselle wines are flavoured. It goes by the name of "Essence of Muscatel," but not a grape of muscatel is grown on the Moselle, or anywhere in that region, fit for wine-making; nor has Moselle wine

naturally the slightest muscatel flavour. It is satisfactory to know that elder-flower juice is not prejudicial to health. It has, we are assured, "from time immemorial been used to make a high flavoured tea for the treatment of slight indispositions."

It appears to be becoming continually more difficult to get anything like the pure juice of the grape in its best natural condition. From first to last the grape is sacrificed to the condition of artificial manufacture. For wine-making grapes are at their best when fully ripe; but then colour has to be considered; and the coloured required by the trade for red wines, as well as the pale hue deemed essential to champagne, can only be obtained from immature grapes. Hence the highest quality of wine is sacrificed for the sake of a conventional dye. In order to protect wine from the effects of careless and hasty manufacture, it has to be "fortified." Sugar has then to be added in order to conceal the brandy. But sugared wine turns acid on the stomach, and people who have suffered in this way, being ignorant of the real cause of their uneasiness, are shy of wine in which they detect an acid flavour. "Plastering," which is the addition of lime either to the crushed grapes or to the fermenting liquor, is therefore resorted to in order to check acidity. Its effect is to remove the natural acids, which are not only harmless but wholesome, and to reinforce the real offender, sugar, with sulphates of a highly purgative character. It is said that one lie breeds another; and it would appear that the first step in adulteration inevitably entails a progressive series of deleterious processes. One of the most startling passages in Dr. Thudichum's and Dr. Dupré's treatise is the account they give of what are called "Sugar Infusion Wines." The manufacture of wine is now conducted on such highly scientific principles that grapes are gradually being dispensed with. According to Petiot's process, 60 hectolitres of juice can be converted into 285 hectolitres of so-called wine, by adding a sufficient quantity of sugar and water to make up the difference, and squeezing the husks of the grapes five times over. In their chemical enthusiasm Drs. Thudichum and Dupré are so enchanted with the ingenuity of this remarkable decoction that they declare it to be not only equal, but superior, to real wine. There is no accounting for tastes, and if people prefer "sugar infusions" to wine they are at liberty to please themselves; but it is surely going rather too far to call them wine.

It is perhaps just as well that the science of fictitious wine-making should have reached this advanced stage. When the manufacturers of sham wines shall have finally abandoned the use of the grape, as a weak superstition of primitive times, the owners of vineyards will perhaps begin to reflect that they had better take their stand on the wholesome purity of the natural juice. The authors of this treatise justly observe, though from their praise of sugar infusions it may be doubted whether they appreciate the full force of the observation, that the more the produce of a distinct variety of wine becomes obscured by mixing, or sweetening, or brandying, the easier it is to imitate it. Hitherto the wine-growers have been playing into the hands of their most dangerous rivals. It is impossible to imitate successfully the best juice of the grape; but the more the juice is mixed and doctored, the less important it becomes as an ingredient, and the easier it is to do without it.

DR. MILLER ON THE ORDINARY FUNCTIONS OF THE HUMAN BODY IN HEALTH.*—"Every function of the living man—whether thinking by help of his brain, for example, or working by means of his muscles, or secreting through the agency of his glands, produces a corresponding disintegration of the appropriate structure; a certain amount of nervous, muscular, or secreting tissue crumbles down, and, for the time being, is rendered useless to the living economy; and, besides, its presence any longer—at least in that condition—would prove hurtful. A twofold action is required: first, to supply renewal for the waste; and second, to have the wasted material suitably removed. The latter object is accomplished by the blood, which, by the help of veins and absorbents, receives the used-up stuff into its backward or venous current, for the purpose of consuming part by the action of oxygen in the lungs, and disposing of what remains by means of the organs of excretion—the liver, bowels, skin, and kidneys. The renewing supply of the waste, from tear and wear, on the other hand, is performed by the arterial blood, in its onward current throughout the frame. Filtering through very minute and numerous vessels, called capillaries, it allows that portion of it which is needful to compensate for the ever-recurring loss to escape, and come in contact with and be applied to the parts which need it. The waste is constant—greater according to the amount of exertion made, but always more or less; and the supply must not only be constant too, and proportional in amount, but also of a *certain quality*. Send venous (*exhausted*) blood to muscle, and you mar both its structure and its working. Do the like by the brain, and the result is similar; you disorder its function invariably, and may easily enough silence it for ever. To nourish, blood must be arterial (*having received oxygen through the lungs*). Having nourished, it becomes venous (*exhausted*)—not only useless but noxious to the organs that need nourishment, and fit only to be sent back through the liver and lungs, there to undergo such changes of giving and taking as shall once more qualify it for its work of supply. In this backward course, as already said, it receives and is mingled with the used-up material, whose loss its next wave has to compensate. And whatever tends to send on this doubly-defiled current over the whole body, with an imperfect performance of the purifying process—technically called *depuration*—must inevitably cause most serious interference with health and longevity.

"But the blood is not a mere circling fluid, 'self-contained.' In every circuit it makes, it loses largely, both in quality and quantity; and *its* loss must be made up. This is done through the stomach. Food is taken in there, masticated, softened, and mixed up, so as to be in a state of suspension and solution. The gastric juice—or peculiar secretion of the stomach—mingles with it; and the *digestion* is carried on, as if in a stew-pan. Having become a pulpy fluid, called *chyme*, the food moves slowly into the alimentary canal; there it receives further additions—bile from the liver, and juice from the pancreas or sweetbread; the nutritious portion, called *chyle*, is taken up by the absorbents, whose various tubes concentrate into one common duct; and this empties its contents into the venous returning blood, just before it begins its purifying circuit through the lungs. So the feeder is fed. But some things—alcohol happens to be one, and the poison of asps another—are impatient of so roundabout a journey; they must be to the blood at once. They will not wait to be digested; but, taken up as they are, by the veins of the stomach, are carried—little if at all changed—into the general venous circulation, and do their work there, whatever it may be, with almost instantaneous rapidity. What takes place ordinarily in the lungs requires a little special consideration. The blood having suffered exhaustion and loss in its work of nourishing all the various parts of the body, having received a supply it greatly needed from the stomach and bowels, in the form of

* "Alcohol: its Place and Power. By James Miller, F.R.S.E., F.R.C.S.E., Professor of Surgery in the University of Edinburgh, &c. &c. London Houlston and Wright, and W. Tweedie, and of all Booksellers. Cloth, 1s.

chyle—as a help; and having got also, what in some respects it might have seemed to have been better without, the used-up material refuse of life and working—as a burthen,—it passes by the right side of the heart through the lungs; and, in the cell-like ramifications of these, it is brought in all its motley mass into contact with the air, which for that purpose has been taken in by the windpipe. This air parts with its oxygen; a large proportion of which unites with carbon and hydrogen in the blood, carbonic acid and watery vapour being extricated in consequence. This important change, chemically called *oxidation*, is really a *burning*. Though not accompanied by light or flame, it is, like ordinary combustion, productive of heat; and, in consequence, it will be readily understood that the process of respiration, when duly performed, fulfils two important objects—aerating the blood, and at the same time helping to maintain the due temperature of the body.

"BUT WHAT IS IT THAT IS THUS OXIDISED, OR BURNT BY THE BREATHED AIR? TWO THINGS. The used-up material of the structures, returned in the venous circulation, is either burnt off, or so modified as to be converted into the most suitable forms for final expulsion from the blood. The greater part is thrown off in the form of carbonic acid and watery vapour, while the rest, imperfectly oxidated, moves on into the general circulation, to be dealt with exhaustively in the lungs on its next transit, or to be disposed of by the liver, bowels, skin, and kidneys. This treatment of the 'waste' is essential, and must be done. But the doing of it is not enough, of itself, to maintain the general temperature. And so a portion of food, digested in the stomach, and received by the blood as chyle, is specially devoted to the process of burning too; that portion consisting of such articles of diet as contain no nitrogen—oil and sugar being special examples. In this wondrous living factory of ours, the waste material is not only burned off—as farmers do 'wrack' on the surface of their fields,—there is besides a special heating apparatus constantly at work; and so, by the twofold process, the blood is purified of its hurtful matter, while the whole frame is maintained in its due heat. Let either part of this process flag, and evil must ensue. Burn off all the blood's impurity, yet have an insufficient supply of extra fuel from the stomach—the body must grow cold.* Send an inordinate amount of peculiarly combustible† material from the stomach, so that *it* shall do almost all the burning—then the blood's impurity cannot be sufficiently consumed; venous blood will come to circulate more or less, instead of arterial; and the most serious consequences cannot fail to happen. The kidneys, and skin, and liver will make great exertions, no doubt—as excretory organs—to throw out the evil thus forced through the system, but they will not wholly succeed; and they themselves will suffer injury in the strain.

* "It is not alleged that the whole of the heating process is done *in* the lungs. On the contrary, there is good reason to suppose (as will immediately be stated) that every act of nutrition and disintegration of tissue throughout the body—every change from fluid to solid, and from solid to fluid—is accompanied with disengagement of caloric. But obviously while much of the 'oxidation' is done *in* the lungs, almost all the oxygen enters *by* the lungs, whereby the 'oxidation,' or burning, is performed."

† "Whether it be because alcohol is 'peculiarly combustible' or not, may not be quite determined; but Prout and others have experimentally ascertained that less carbonic acid than usual is evoked during the presence of alcohol in the blood, and that that fluid is decidedly darker than in persons untainted by the 'poison.' It would almost seem as if alcohol, circulating in the blood, to a considerable extent suspended, for the time, the chemico-vital processes proper to the fluid in its normal state. Thus the oxidation of the phosphorus of waste tissue is sometimes so interrupted by alcohol, that the body of the drunkard smells of phosphorus, his breath presents a visible phosphorence, and his urine is luminous in the dark. As will afterwards be seen, this is the only luminosity which alcohol imparts to the debauchee."

The blood will remain impure, important organs of the body will be thrown into a state of disorder, and disease of a serious kind may be established. But the whole of the oxygen taken in by the lungs is not thus accounted for. About a fourth passes into the system, with the blood, without being spent at all on oxidation of the 'waste.' This portion of the oxygen cannot well be traced in its course; but there is good reason to believe that it acts an important part in the change of the nutritious part of the arterial blood into living tissue—supplying renewal for the 'waste;' and that it is again active in the crumbling down of that tissue—constituting the 'waste;' in both actions evolving caloric. And so here is a third way of maintaining the general temperature. Under the term 'alcohol' is included, let it be distinctly understood, every kind of intoxicating drink. All the varieties of spirits, wines, and malt liquors are the same as to their intoxicating quality; that invariably depends upon the presence of alcohol. This may be more or less diluted, mixed, coloured, and flavoured; or, as in the case of malt liquors, combined with a small quantity of nutritive material;* but it is always present, and according to its amount is the intoxicating power of the beverage. A man is apt to draw a broad distinction—greatly in his own favour—between himself drinking beer and another drinking brandy, as a daily habit; but the truth is, that both are drinking the same thing only in different guise and dilution; chemically and practically, there is much the same difference as between one who drinks spirits 'neat' and another who drinks his allowance of the same thing largely 'watered.' The one drinks alcohol slightly diluted; the other drinks alcohol much diluted, and somewhat modified by flavour: but both are drinking alcohol. Not a day passes but you may hear, 'I am no drinker; for years I have never touched spirits; I take nothing but wine.' The man who so expresses himself may be in the habit of taking his pint of sherry, or quart of claret, daily, or all but daily; and, while honestly convinced that he is touching no 'spirits,' is really swallowing the same amount of alcohol as if he had taken a glass or two of raw brandy or whisky instead. He believes that spirits are injurious; he would not take *them* for the world; yet all the while he *is* taking them; and surely it is of great importance that he should be undeceived. Let it be well understood, then, at starting, that all intoxicating beverages contain alcohol, as their characteristic and essential ingredient; and, however they may vary in taste or appearance, their chemical constitution as intoxicants is practically the same. Beer, no doubt, is less hurtful than brandy—wine less dangerous than whisky; but chiefly because they contain less alcohol.

"*Alcohol is* a poison. In chemistry and physiology, *this is its proper place.*

"Many readers may receive this dogmatic assertion with a 'Pooh, pooh'—'Fanaticism and folly'—'We know better.' Let me support the assertion, therefore, by authority. 'The sedative action of alcohol on the brain,' says Christison—and we know no higher authority, either as regards poisons or the articles of the materia medica—'constitutes it *a powerful narcotic poison.* For its effects as such, if rapidly brought on by a large dose, *there is no antidote known;* the only efficacious treatment consisting of speedy evacuation of the stomach, and the employment of brisk external stimuli.'

"NOW LET US INQUIRE AS TO THE EFFECTS OF THIS FORMIDABLE AGENT.—Obviously, they will vary according to the age and condition of the recipient, and especially according to the manner and amount of the administration.

"I. Alcohol absolutely pure is seldom, if ever, taken internally. To make it at all tolerable to the stomach, it must be diluted; and the strongest brandy, whisky, or other 'spirit' contains a large proportion of water—thirty, forty, or fifty per

* "Very small in the best of them, especially if you exclude the saccharine stuffs. For, according to Liebig, suppose a man to consume, daily, eight or ten quarts of 'the best Bavarian beer,' he will obtain from it, in the course of twelve months, no more than the same quantity of nutritive constituents contained in a five-pound loaf of bread."

sent. But though thus modified, a large quantity in the adult, or a small quantity in the child, may prove rapidly fatal. It is almost at once absorbed by the veins of the stomach, and mixing with the blood is carried to all parts of the body, affecting certain of these very specially,—namely, the nervous centres. These are paralysed; the heart stops, and life ceases. A man quaffs a quart of brandy almost at a draught, tumbles down, and dies on the spot. The shock of the large dose of alcohol on his nervous system, with which it is almost immediately brought into direct contact through absorption into the blood, acts like a blow on the head, or a kick on the stomach. Prussic acid is not more deadly. To obtain some idea of the rapidity with which alcohol dashes through every obstacle to reach the brain—the material organ of reason, and the special object of the poison when once it gains access to the body—consider the following experiment of Dr. Percy:—He injected about two ounces and a half of alcohol into the stomach of a dog, and the animal dropped dead almost instantaneously. As soon thereafter as he could remove the brain—an operation which occupied only a few minutes—and place it in an apparatus for distillation, he by that process extracted from it a notable quantity of the alcohol—more than from an equal weight of any other part of the body, or of the blood itself.

"II. But the dose may not be such as to kill at once by shock. The bottle, we shall suppose, is consumed more leisurely, and by and by the man is found in a state closely resembling apoplexy—with suffused face, labouring pulse, heavy, noisy breathing, and total insensibility. What has happened? The alcohol absorbed has reached the nervous centres as before, and has all but paralysed their functions; in consequence, the heart and lungs are both acting most imperfectly; the blood is failing to receive its due proportion of oxygen in its oozy passage through the lungs, and is, besides, directly altered for the worse by the alcohol's actual presence in it. The man is choking gradually, as if with a rope round his neck, or a clot of blood in his brain. The hand of alcohol is on his throat; breathing becomes slower and slower, the heart beats more and more faintly, the body grows cold, and in no long time all is still in death. Peculiar circumstances may render such an event possible under even a comparatively small dose. Ordinary 'intoxication' may not have occurred, yet the alcohol may so injuriously determine to and act on the brain, as to cause congestive apoplexy, modified by symptoms of poisoning. And under this, life may give way, as in the following case:—A gentleman supped out, drank several tumblers of toddy, came home, went to bed. In the morning he was found insensible. A physician, hurriedly called, at once recognised the symptoms as those of narcotic poisoning, and treated the patient accordingly. Reaction began, but failed, and death occurred within a few hours. On dissection, no organic lesion or other cause of death was detected. The contents of the stomach were carefully secured, and made over to the care of a skilful chemist. Morphia was suspected, but nothing could be found—save alcohol.

"III. *INTOXICATION!* We need not describe what every one has seen, and not a few have felt. Let us, however, trace the action of the agent in this too common variety of alcohol's effects. Reaching the brain more gradually and in smaller quantities than in the previous examples, the alcohol acts as a stimulant at first. The intellectual functions are excited, as shown by gaiety, talkativeness, animated expression, play of fancy, and increased rapidity as well as variety of thought. But the paramount function of *voluntary control*—the great distinguishing characteristic of the human mind—is already affected otherwise than by increase or exaltation. While perception, memory, and imagination are specially excited, the will, almost from the first, is sensibly impaired. The mind suffers in its best part, through even slight tampering thus with the material organ wherewith it is connected.

"The heart is roused, and beats quicker; the general circulation is hastened, and the whole frame feels warmer, stronger, and better.

"As the dose is continued, its effects are not only observed in the functions of

the anterior and upper parts of the brain—its intellectual portion—but extend to the deeper and posterior parts, connected with special sense and muscular power. Sight and hearing are affected, the limbs grow weak and tottering, the head swims, the tongue refuses distinct articulation. At the same time intellectual excitement becomes more and more decidedly intellectual perversion, partaking of the nature of delirium; reason is at a discount, and voluntary control placed more and more in abeyance. What is specially human is lessened, what is merely animal is intensified; the passions rise rebelliously, and defy all moral control; and the man becomes, under his own act, what the law has quaintly termed him, '*voluntarius demon*.' He is temporarily *insane*, and fitted for any act of violence to himself or others. But as the poisoning material filters on into the frame, its effects advance still farther. All semblance of stimulation, in any part or way, is over now. Intellect is all but departed; and muscular power, as well as the special senses, are gone or going too. Besides involvement of the whole brain, the upper part of the spinal cord is suffering; and, in consequence, the heart is weakened, the pulse is labouring, the respiration is oppressed; the face, that awhile ago was pale and haggard, is growing swollen and livid; and unless a halt is called now, life will speedily be in peril by coma. The best that can happen is a heavy deathlike sleep of long duration, with an awakening to fever of body and misery of mind.

"FOR THE MENTAL AFFECTION MAY BE OF A DIFFERENT FORM STILL—WHAT IS TERMED '*DELIRIUM TREMENS:*'—the body weak, the nerves unstrung, the mind a prey to all manner of rapidly shifting delusions, with suspicion and fear; violence to others improbable, but injury to self not unlikely. This may be the result of an occasional bout of hard drinking, or may form a part of the 'chronic poisoning.' Ordinarily, it is connected with some aggravated excess in the habitually intemperate. As a sample, take a case—in some respects curious. A gentleman of middle age, and active business habits, had for years been intemperate; and more than one attack of *delirium tremens* had imperilled his life. When first I saw him, he was in his shirt, hopping incessantly from chair to chair, in order to avoid myriads of snakes that were crawling on the carpet. Then the vision changed upon him, and he rushed about more violently to escape from men following him with sharp knives. Suddenly he leaped upon the bed, arranged his limbs quietly, and scarcely breathed. He told us he was dead, and read out an announcement of his sudden and unexpected decease, from the page of an imaginary *Courant*, concluding with 'Friends will please to accept of this intimation.' So he lay for some minutes, affording breathing-time to his attendants; but all of a sudden he rose, went into the sitting-room, and began to write with a trembling hand hastily at the table. He said that he had stupidly forgotten to add a codicil to his will, and was glad to find that it was not too late to supply the omission. Having written a tolerably coherent statement, to the effect that he had died on such a date, and that he begged his employers to support his son as his successor in business, he quietly returned to his bedroom; but no sooner did he cast his eye on the empty bed, than he broke forth in a most violent tirade against the attendants for having stolen his body. 'Where is it? where is it? I left it lying there when I went into the parlour to write the codicil, and when my back was turned some scoundrel has taken it away. Bring it back instantly.' And so he lapsed into excitement again. But by and by stupor came on, he lay quiet once more, and despite of all the help that we could give, the 'died at Edinburgh' became a sad reality. The man does not always die, however; he may recover many a time, drinking on and on; but death in the paroxysm is not unfrequent; and, besides, this trembling delirium may pass away, only to be followed by steady insanity.

"ALCOHOL AS FOOD.—Here is the fundamental and fatal error; men esteeming that to be food, and using it as such, which is really not food, but physic. Food, properly so called, is that which enters the stomach, and is

thence absorbed into the general circulation, with the double object of nourishing the body and maintaining its due temperature. Such food meets with a solvent in the natural secretions of the stomach, and of other organs connected with the chyle-making apparatus—such as the salivary glands, the liver, the pancreas; and, besides, a solvent is needful also from without—holding the food in solution at the time of being taken, or swallowed along with it, or after it, in sips or draughts. Now, can alcohol be duly entered here as food, or solvent for food? Not as the latter, certainly. It refuses to act along with the gastric juice. 'It is a remarkable fact,' says Dr. Dundas Thompson, 'that alcohol, when added to the digestive fluid, produces a white precipitate, so that the fluid is no longer capable of digesting animal or vegetable matter.' 'The use of alcoholic stimulants,' say Todd and Bowman, 'retards digestion by coagulating the *pepsin* (an essential element of the gastric juice), and thereby interfering with its action. Were it not that wine and spirits are rapidly absorbed, the introduction of these into the stomach in any quantity would be a complete bar to the digestion of the food, as the pepsin would be precipitated from solution as quickly as it was formed by the stomach.' In the laboratory of the pharmaceutist, alcohol is very valuable as a solvent; it holds many things in admirable solution, and many a good tincture it makes. But in the living stomach of man—which *ought* to be no drug-shop—alcohol tends to harden and coagulate rather than to soften and dissolve. 'It is through the medium of the *water* contained in the animal body,' says Carpenter, 'that all its vital functions are carried on. No other liquid than water can act as the solvent for the various articles of food which are taken into the stomach.' Water dissolves them there; water carries them into the blood, and through the frame; and water helps to work them off again when useless. Indeed, water seems to have a very remarkable power in depuration of the system from the noxious presence of effete material—more especially when taken beyond the limits of what mere slaking of thirst requires. And on this *water-power*, no doubt, much of the success of 'the water cure' depends.

"BUT IF ALCOHOL BE NO SOLVENT OF FOOD, IS IT FOOD ITSELF? Let us see. Can it nourish or repair the waste of tissue? Not at all. It contains no sufficient chemical constitution for that end; and, besides, as we have seen, it is conveyed *unchanged* into the blood, and so circulates there until either disposed of by combustion in the lungs, or removed (more or less modified then) by the organs of excretion. Does it help to maintain due temperature? It is only too ready to do so. It is very forward to be burnt in the lungs. But is its action there desirable? The mixed ordinary food of man (as beef, bread, and vegetables) which nourishes his body—doing specially and well what alcohol cannot do at all—contains not only the peculiar materials for nutrition, but more or less of *fat* or *oil*, and *sugar* or matter convertible into sugar. Now these—especially the oil—are very suitable for oxidation by the lungs,—hence often termed 'respiratory food;' and their peculiar function seems to be the undergoing of that process, with a view to maintain temperature—in so far as such maintenance may be necessary, in addition to what is done by oxidation of the waste material returning in the venous blood. In other words, the natural arrangement as to maintaining temperature seems to be as follows:—Probably every act of nutrition and every act of disintegration of tissue—the passing of fluids into a solid, and of solids into a fluid condition—is attended with more or less production of heat; a special supply of spare oxygen being provided for that purpose. Besides, the disintegrated and waste material in the venous blood is burned off, combining directly with oxygen taken into the lungs. And any further combustion which may be necessary for completing the efficiency of the warming apparatus is effected by means of the oil and sugar, more especially the former, which ordinary food supplies. Now, it is ascertained that in ordinary food, received in even moderate quantity, there is not only enough of these combustible materials to ensure sufficient temperature, but more than enough—the superfluity being stored up, as it were, in the ordinary fatty tissue

throughout the body, to meet accidental scantiness of supply, through long fasts or famine.

"Suppose, now, that alcohol is taken in any considerable quantity, along with the ordinary supply of food. It gets speedily into the blood, and into the lungs. There it has a greater appetite for oxygen than any of the other combustible materials we have mentioned; and accordingly is burned off first. The temperature may be maintained in this way, no doubt. But what happens in consequence of the temperature being thus maintained? Two things; or one of two things at the least:—The oil and sugar are not burnt off sufficiently, and these materials accumulate unduly in the body; or the waste material of the blood is not burnt off sufficiently, and this accumulates unduly in the body—poisoning the blood, and producing the serious consequences formerly spoken of; or both of these results may occur, as we believe most frequently is the case. And a third evil is also possible:—The 'spare oxygen,' as we have termed it—intended to circulate with the blood to the remotest parts of the system, and to act an important part during both the waste of tissue and its repair, so generating heat—may also be seriously encroached upon; so great and greedy is the appetite of alcohol for this substance. The obvious deduction is surely this: that when man receives a fair average supply of food, he obtains at least enough of combustible material thereby; and that when alcohol is taken in addition, it is unnecessary; the act is a work of pure supererogation—so far as warmth-giving intra-combustion is concerned. And further, the alcohol so taken is not only unnecessary, it is also hurtful, by preventing certain changes in the constituents of the blood, the occurrence of which is essential to health. Alcohol, in short, is in such circumstances not only unnecessary but injurious.

"THE POWER OF ALCOHOL TO SUSTAIN A MAN UNDER BODILY LABOUR.—Many believe that such power exists to a very great degree, and they ground their belief on personal observation. All is based, however, on a fallacy. Labour exhausts vital strength—wasting structure, lowering function. The natural remedy for such exhaustion is food and rest. Waste of tissue is repaired, and the living power of the renovated tissue re-accumulates, ready for a fresh bout of working. The exhaustion of bodily labour, remember, implies disintegration of substance, as well as diminution of power, especially in two tissues—the muscular and nervous: the muscular is the direct agent of work; the nervous is the inciter and inspector—the 'oversman;' and both are more or less exhausted by their respective duties. Now, how is such exhaustion to be either retarded or recovered from? We again say, by food and rest, properly arranged in regard to time and quantity. Let a man have sufficient food, and sufficient rest, at the proper times; and he needs no other corporeal help for the due discharge of his daily toil. He is thus enabled to overtake as much work as his frame is naturally fit to bear. And if, under such circumstances, he break down, or threaten to do so, it is a sign, not that he needs more working power, but that, being overtasked, a portion of the exacted work should be foregone. And, consequently, the man who stimulates himself, under such circumstances, is guilty of folly; while he who stimulates another, in similar circumstances, is guilty of cruelty and oppression. Now, can alcohol be brought under the category of 'food' here? As such only can it prove a true antidote to exhaustion by labour. No one asserts that it has any power to repair muscular tissue. Has it any power to nourish or repair nervous tissue? This question is open to debate; but our best authorities answer it in the negative. Well, then, if you give alcohol to a man exhausted, or being exhausted, by labour, what effect does it produce? Does it not revive him, giving to his hand a stronger grasp, and to his limbs new vigour? do not the strokes of his hammer gain a fresh force, and does not the task which he had almost abandoned become rapidly consumed? How is this? Not that he has got any nourishment or repair—any real return of strength; but because he has been goaded on to expend the remainder of his then existing strength or working

capital more rapidly and determinedly than he otherwise would or could (or should) have done: the ultimate result, of course, being, that when the task is done, the man is done too. The exhaustion is infinitely greater than it otherwise would have been.

"The alcohol does not give substance and strength to either of the decaying tissues; it only *stimulates* one of them—the nervous; and so forces on this to force on the other. The nervous system is to the muscular as the rider to the horse, guiding and controlling its movements. Alcohol provides this rider with a spur and whip, whereby the poor horse, jaded though he be, may be urged on to do an amount of work which otherwise he would have broken down under. With what benefit to the horse? Exhaustion, fatigue, founder. With what benefit to the rider? There is retribution here; the result is, fatigue and founder too: for the alcohol, acting as a stimulant to the nervous system, exhausts *its* force and disintegrates *its* tissue in compelling it to urge on the muscles to a more rapid exhaustion of their force and disintegration of their tissue. The spur and whip, in their effects, exhaust the horse, but the labour of whipping and spurring exhausts the rider too; and after the effort is over, both the inciter and the incited are in much the same plight. Had it not been better to have ceased from work for a time, giving the beast of burden its food and rest, the dismounted rider likewise seeking his refreshment and repose; so that, after a while, both might have started with new mettle? If alcohol has any power whatever in giving strength, wind, endurance, *condition*, why do trainers make so little use of it in preparing their men for feats of great exertion? *All* trainers use it, we know, most sparingly; not only in small quantity, but much diluted. And the *best trainers* do not employ it at all; strictly forbidding its use, indeed, because experience has told them of its hurtful tendency, in opposing rather than favouring their object in view. Tea and coffee, then, may rank both as food and medicine. And the question naturally arises, in reference to their latter character, whether the copious and constant use of them as food is quite proper and safe? This, as we have seen, is *not essential* even under the greatest exertion. And without presuming to dogmatise, we would venture to say that when used as ordinary diet, or as luxuries in connexion with it, they ought to be taken weak, as well as in moderate quantity—in other words, temperately; while large and strong doses ought to be reserved for the necessities of the nervous system arising from exhaustion by labour or thought, depression by accident, or disorder by disease. When judiciously used, they may contribute greatly to our comfort—as much as any form of alcohol can do, and with none of its sinister results on body, mind, or morals. Call them medicines, if you will. They are 'domestic medicines,' at once safe and suitable; and, as such, the canister may range on the frugal cupboard far more appropriately than the decanter or the black-bottle, the tankard, the greybeard, or the glass. The great advantage of the water-drinker, as compared with the alcoholist, under work, is this. He has the same strength, with greater self-control. He is ready to stop, when necessity requires that he should, and runs less risk, consequently, of injury by excessive strain. He does not expend a temporary energy, at the expense of future exhaustion. He does not avail himself of a doubtful and deceitful help, at the cost of deterioration of the blood, and consequent danger to health and life. He does his work at least as copiously and as well as the other, even for a time; and in long continuance of labour, he will do it both more copiously and better. He obtains his desired end in all respects satisfactorily. There is no lassitude, headache, feverishness, foul tongue, or aching limbs the next day—even after the hardest labour. All is fresh, and supple, and free. *There is no reaction.*" *

* "I have backed as many as 60 tons in a day, with perfect ease," says a London coal-whipper, "*since I took the pledge.* But, *before*, I should scarcely have been able to crawl home; *certain to have lost the next day's work.*" [By

As my purpose in publishing this Work is as much to prevent disease as to cure it, I think the following extract from "*Meliora*," the new Quarterly Magazine of the Alliance for the suppression of the sale of intoxicating drinks, may be useful in showing the importance of promoting the welfare of our fellow-creatures by our own example of self-denial and action in the cause of God and man, to rescue poor souls brought in bondage by what never can add to health, strength, or real pleasure.

"INTEMPERANCE is one of the greatest social evils in this empire. Our country, which ranks so high among the nations for civilisation, liberty, and commerce, is confessedly the most drunken. Its drinking customs eat out the life of the lower classes of the people. Formerly the upper and middle classes were public scandal for their drunkenness; but now, when these are reforming, the lower classes have become the prey of this insidious and destructive vice. The facilities for drink abound, and publicans outnumber all other trades. In cities and towns spirit-shops and beer-houses are at every corner; and in the most rural districts they are numerous. In some localities they are in the proportion of 1 to every 15 houses, and throughout the country there is 1 to every 137 people. They are resorted to by our mechanics, artisans, and labourers, and, alas! too frequently by their wives also:—

> 'Tis here they learn
> The road that leads from competence and peace
> To indigence and rapine; till at last
> Society, grown weary of the load,
> Shakes her encumber'd lap, and casts them out.'

"Intemperance costs the country about £60,000,000 a-year. It is the chief cause of most social evils. Ministers of religion testify that it is the greatest evil to their success. City missionaries regard it as the most powerful obstacle to their labour among the sunken masses of the people. Poor-law guardians ascribe to it the majority of cases of pauperism. Our judges and prison governors declare that it occasions most criminal offences. Medical men in hospitals and in general practice find it the most prolific source of disease. Governors of lunatic asylums refer the insanity of many of their unhappy patients to its dire influence. Commercial statistics show its injurious effects on trade and shipping, and vital statistics its evil influence on life. It is the chief cause of *pauperism*. Sir Archibald Alison, the sheriff of Lanarkshire, attributes one-half of the pauperism to intemperance. The late Archibald Prentice, who was well versed in the social condition of Manchester, says that two-thirds of the pauperism there is similarly originated. An Edinburgh inspector of the poor made this statement:—'An experience of nearly twenty years in the management of the poor has forced me to the conclusion that nearly two-thirds of the destitution which exists, and is relieved from the poor's funds, is traceable either to the more remote or immediate causes of intemperance.' Of £21,000 expended, the same individual deducts £12,000 for the fruits of drunkenness. If we take this portion as a fair average, then, of the ten millions spent in support of the poor, *six* are caused by intemperance; and of the million and a half of persons relieved, about one million are brought to poverty by drink. Were this social evil cured, or even considerably arrested, how much would taxation be lightened, and how many families would be saved from poverty. That intemperance is the chief cause of *crime* in this country has been frequently proved before Committees of the House of Commons, on the evidence of magistrates, gaol chaplains, and others interested in the subject. From some statistics now before us, procured and published by the Scottish Association for the Suppression of Drunkenness, it is abundantly attested that nearly fifty per cent. of commitments in Scotland are directly caused by intemperance, and two-thirds of the

"backing," the man meant carrying sacks of coal on his back from the barge they were unlading to the cart.]

other cases indirectly. The opinions of those who have occasion to come into closest contact with criminals have frequently expressed the same conclusion. We need not repeat what has been often quoted; but we may be permitted to give a few extracts from reports and speeches by persons whose words have authority. Matthew Davenport Hill, Esq., the Recorder of Birmingham—a gentleman whose interest in social reform is known to all, and whose ample opportunity for careful examination of criminal cases, as well as his painstaking consideration of the question, entitle him to be heard with respect—made the following statement to the grand jury of Birmingham, in January, 1855 :—

"'Those of you who bear in mind the charges which have been delivered from this bench, on the causes of crime, will naturally ask how it is that the enormous consumption of intoxicating liquors which prevails through the land—a source of crime not only more fertile than any other, but than all others added together—should have been hitherto passed by, or only have been brought under notice as incidental to some other topic. The subject has occupied my thoughts for years; strange, indeed, must have been the state of my mind if it had not forced itself upon my attention, since the evils arising from the use of intoxicating drinks meet us at every turn. And, for myself, I cannot pass an hour in court without being reminded, by the transactions which are put in evidence before me, of the infinite ramifications of this fatal pest.' He then goes on to say:—'Crime, gentlemen, is the extreme link in the chain of vice forged by intemperance—the last step in the dark descent; and thousands who stop short of criminality, yet suffer all the other miseries (and manifold they are) with which the demon Alcohol afflicts his victims.' The Rev. John Clay, long the chaplain of Preston Gaol, and well known as an accomplished statist and practical philanthropist, said in Thirty-first Report, 1855 :—'I would note the fact, that during two years I have heard 1,126 male prisoners attribute their offences—frauds, larcenies, robberies, burglaries, rapes, homicides—to drink! And if every prisoner's habits and history were fully inquired into, it would be placed beyond doubt that *nine-tenths* of the English crime requiring to be dealt with by the law arises from the English sin which the same law scarcely discourages.'

"Similar testimonies are being delivered every day by those who are connected with the administration of criminal law; and they are sufficiently alarming to demand the attention of our statesmen, philanthropists, and the sober and industrious people. They force the conviction upon all who desire to advance social reform that some stronger restraint than has been hitherto tried should be laid on the traffic in intoxicating liquors, for the protection of public virtue and the welfare of the people. Intemperance is a great cause of *disease*. Of course we do not mean to affirm that disease would be extirpated if the community were delivered from drunkenness. But just as the removal of filth is a prevention of cholera, so the promotion of temperance would lessen the multifarious ills which body and spirit endure from drunkenness. Bodily diseases are greatly induced by drinking. Indeed, the habitual use of intoxicating drinks is injurious to the constitution. It is an artificial mode of life, inconsistent with the natural operation of bodily functions. They exercise a deleterious influence upon the nervous system, the eye, the alimentary canal, the liver, the heart, and the kidneys, as may be learned from medical opinions of the highest authority. It is well known that the greater part of those who fall victims to fever and other epidemic diseases are such as indulge in ardent spirits, and the vices to which they inflame them. On this subject the evidence of Dr. Gordon, of the London Hospital, given to the Parliamentary Committee, may be sufficient. 'My attention,' says he, 'was called to it some time ago, at the time I was assistant physician to the hospital, and was in the habit of seeing the outpatients to the amount of some thousands, probably, in the course of the year. I kept an account for twelve months. . . . . It amounted to 65 per cent.

upon some thousands.' Coroners bear the same evidence. Mr. Wakley asserted long ago that 900 out of 1,500 deaths annually brought before him were caused by excessive drinking. Once and again, though we believe he has expressed himself otherwise since, did this able coroner state:—'I am surprised that the legislature, which is justly particular about chemists and druggists vending poison, is not equally so with the vendors of gin, which appears to cause such a dreadful waste of life.' *Insanity* is occasioned more by this vice than by any other single influence, if we except hereditary disposition. Dr. Browne, of the Crichton Asylum, Dumfries, in a paper on the subject, declares that of 57,520 cases in the present century which he has carefully examined, and which were treated in public asylums, 10,717 were caused by intemperate habits. This does not include the numbers of the insane kept at home or in private boarding-houses. 'It is enough,' says this gentleman, 'that while the virtuous sorrows, the inevitable misfortunes, and the physical diseases, and the many other evils to which man is exposed, produce in fifty years 40,000 lunatics, drunkenness, drinking, the pleasures of the table, produce 10,000.' The contrast between drunken and sober countries in relation to insanity is very striking. 'In Scotland there is 1 lunatic to 563 sane persons; in Spain, 1 to 7,181.' 'In Edinburgh every sixth lunatic owes his misfortune to intemperance; in Palermo every twenty-first lunatic is in the same predicament.' The late Dr. Blomfield, Bishop of London, from statistics of 1,271 lunatics, found that 649, or nearly one-half, were deprived of reason by intemperance. A most lamentable fact connected with this is, that the children of drunkards are weak, hysterical, wayward, and diseased. The late Rev. W. J. Conybeare, in his able article on Intemperance in the 'Edinburgh Review,' declares that of 300 idiots in Massachusets, 145 were the children of drunkards. These facts—and they might easily be multiplied a hundredfold—are sufficiently alarming, and call for some remedial measure to arrest a growing evil. We might assert, also, how much intemperance, and the manufacture of and traffic in intoxicating drinks, injure remunerative trade and lesson the demand for productive labour. The economics of this question form an argument of singular force and of practical power, were it brought out fully, as we trust it will be in the pages of this journal. It is only necessary at present, in thus hinting at the subject, to state that, from statistics of undoubted authority, it has been proved that of £100 worth of shoes, £37 go to the workman, 40 per cent. of earthenware, 48 per cent. of linen yarn, 66 per cent. of woollen cloth, besides 5 per cent. for making clothes. Whereas of £100 spent in alcoholic drinks, only £2 10s. go for labour! The manufacturer of useful articles will employ thirty-four men at £1 5s. per week, where the manufacturer of strong drink will employ but *two*. Working-men should be made to understand this fact—it is worth remembering—that the manufacturer of alcoholic drinks employs but one labourer where the manufacturer of other commodities employs *seventeen*. If the destructive vice of intemperance were prevented, the demand for productive labour in useful articles would be greatly increased, and the revenue of the state would be supplied by the greater purchase of taxed goods. But the economics of this question is too great a subject for our present limits.

"It may now be asked, what is the cure proposed for this social disease? We unhesitatingly answer, that when any vice becomes dangerous to the community, it must be dealt with surgically. It must be cut off by legal restraint and moral reprehension. Those to whom ardent spirits are a temptation ought at once and for ever to abstain from their use. These stimulants, when once their fire has kindled a passion, are not to be trifled with. The passion is like phosphorus, easily ignited and rapid in its combustion. To save such a number as annually fall into poverty, crime, disease, and an early grave; to preserve many homes which annually become a waste and a place of weepers; to save wives from widowhood, children from orphanage, and generations from hereditary diseases; to save souls from suicide, the terrible spectre of their own consciences, the accusations of heaven, and the dread retribution,—let us promote abstinence.

To keep feet from falling into a pit so bottomless ; appetite from craving with a thirst insatiable ; means from melting into water which cannot be gathered up again ; men from becoming paupers, dependent on the pitiful dole of a poor-law officer ; invalids, with bloated face, blushing nose, and bloody eyes ; maniacs, with 'a brute, unconscious gaze,' with *delirium tremens* peopling the room with shapes of hideous fiends ; from becoming social and moral wreeks, outcasts from society and from God—let us aid in delivering the land from drunkenness.

"But many of our readers may not be tempted with ardent spirits to become drunkards. They have not felt any harm from the use of strong drink. They never took too much. They let their 'moderation be known to all men.' They are exemplary citizens. But they see their fellow-citizens ruining themselves on every side, their families becoming dependent on the public, and the tax to feed and punish them grudged ; but they do nothing more than show the tempted that they can play with fire and not be burned. Their weaker brethren, like Samuel Johnson, 'cannot take a little ;' they cannot take coals into their bosom without being burned. Something more than has yet been attempted must be done on behalf of the drunken masses of the people. It would not be a great sacrifice to abstain for the sake of the drunkard. Sympathy with the degraded philanthropy, patriotism, and Christianity demand that some earnest and active and self-denying effort be made. What father would put in the power of a drunken son the temptation that would ruin him ? A family has a right to protect itself ; and, for the sake of one, *ten* would willingly forego the use of intoxicating drinks as beverages. There are hearts among us, warm with a pure benevolence, who are ready to give labour and means to save a needy or perishing brother, who regularly surrender a portion of their money for philanthropic purposes. Here is a sphere for liberality and example. The community is cursed with drunkenness, and tempted by facilities for drinking. Let philanthropists combine to preserve social as they do sanitary health, and remove the temptation from the imperilled. A community has a right to protect itself ; and it is a virtue to sacrifice for the prevention of sin. The weeping mother who has now to sally forth to scenes of revelry and debauch to seek her drunken son ; the faithful wife that sits at home beside her cradle, and can scarcely sing a lullaby to her crying child, for the sobs she heaves, and the salt tears she sheds over the husband of her youth, who is drinking in the tavern ; all the families who have any member addicted to this vice—and there are *two out of every three homes* of the humbler classes in this painful position ; the tempted, who are so often dragged to spend their wages and blight their peace by indulgence in alcoholic drinks ; the besotted drunkards themselves, who are given over to the insidious vice and its consequences, and who cannot resist the opportunity,—would all hail deliverance, were the traffic in intoxicating liquors totally suppressed. But the evil is not merely domestic or provincial, it is national ; and a people have a right to protect themselves. The patriotic and the Christian, who care for the common weal, are bound to attempt to roll away the reproach of drunkenness from the land, and to save the tens of thousands who every year perish by this evil. More than ever is this cause growing in interest and importance. More than ever are Christian men convinced of the necessity of restraining the liquor traffic, and of suppressing it altogether, except for medicinal, artistic, and sacramental purposes. But public-houses are *licensed* by the State, and a large portion of our revenue is raised by 'the sale of what is both physically and morally injurious to the people.' That which is morally wrong can never be politically right. It is contrary to all sound morality to enact laws which will, either directly or indirectly, foster crime. That the laws at present in operation with regard to public-houses have such a tendency, there can be no doubt. 'The beer-house and the gin-shop,' says the Recorder of Birmingham, 'are the authorised temptations offered by the legislature to crime.' There must be an alteration in these statutes. The conscience of the country is being aggrieved by them, and when once the public feeling is aroused on a matter of right, its demand must, sooner or later, be met. Compromise is fatal.

THE TEMPLE OF WOE.

THE TEMPLE OF WOE; OR BRITAIN'S CRY AND CURSE ! !— Having finished a pleasant walk, I sat down on an old oak bench with my newspaper, and was reading an account of the execution of Hans Macfarlane and Ellen Blackwood, for the murder of Boyd, at Glasgow, when a little girl came up and made a very modest curtsey; she had an interesting countenance, but marked with early sorrow. She told me she had two little sisters; that her mother was dead; her father did nothing but drink; and that she had to beg bread for herself and little sisters (statements I afterwards found to be correct). I put my hand in my pocket, intending to give her a penny, but the little timid thing ran away, frightened by the yelling and cursing of a drunken harlot, who was swinging her arms in the air, and vowing vengeance on a number of boys and girls who were shouting at her. At the same moment a crowd of people were running to see a man the police were taking to prison for house breaking, and whom they had apprehended in a gin shop. Murderers, robbers, harlots, and beggars, all crowding before my mind together, led me to think there must be some terrible cause at work. Might not Hans Macfarlane, Ellen Blackwood, the enraged harlot and the gin-drinking robber, once have looked and been as innocent as the little timid beggar? These reflections produced a vision of the mind, which, however strange, is, alas! too true.

An extensive and beautiful valley spread out before me; in the middle of which stood a magnificent temple, octagonal or eight-squared in form, and every square a different style of architecture. On every side a door, seven for entrance, and one for an outlet. Over the front entrance was a spirited picture of the Rising Sun, and, in large gilt letters, "British and Foreign Wines." Over three doors on the left, "Gin, Rum, Whisky;" and on the right, "Ale, Porter, Brandy." The letters were vermilion and gold, curiously enriched with coiling, hissing serpents. The eighth and back door was covered with black cloth. Over it was a picture of the Setting Sun, and on a dark lead-colour ground was written, in black letters, "The wages of sin is death." The vast concourse of people crowding and pressing to enter the temple by the various doors was perfectly astonishing: every grade, station, and character had their representative in the mighty throng In at the front, or wine entrance, went cardinals, bishops, priests, preachers, judges, statesmen, magistrates, lawyers, doctors, merchants, generals, admirals, and some classes of tradesmen, together with many elegantly dressed ladies. At numbers two and three, Brandy and Whisky doors, went in smaller trades and professional men, such as attorneys, stewards, auctioneers, grocers, agents, small masters, overlookers, and half-pay officers. At numbers four and five, Gin and Rum doors, fearful gangs of showmen, blacklegs, pickpockets, jockeys, swindlers, impostors, bullies, harlots, soldiers, sailors, gamblers, old women, young women, and even children. At the sixth and seventh, or Ale and Porter doors, went in dragmen, cabmen, carters, colliers, and all classes of mechanics, with their sweethearts and wives.

From the inside of the temple proceeded every possible, variable, conceivable sound. The organ, piano, harp, violin, dulcimer, trumpet, cornet, bugle, and horn: the sweet

mellow voice of song; the wild laugh, loud shout, and rattle of the dance; the fiery eloquence of the political orator; the angry growl of the secular debater; the deliberate, polite, cautious, gentlemanly controversy; also fighting, cursing, swearing, blasphemy, screaming, yelling, roaring, and groaning, with other sounds awfully appalling, like the wild, wild shriek of the murdered and dying.

Beyond the temple, in the form of a crescent, stood eight extensive, costly, but gloomy-looking buildings. The judgment hall, insolvent debtors' court, infirmary, madhouse, penitentiary, tower, gaol, and workhouse. Dividing these buildings in the centre was a graveyard, in the middle of which was an upright post and cross-beam and halter; over the archway leading to the burial-ground was written, "Hell and destruction are never full." But there was one fact struck me, which I think especially worthy of note: there were paved roads leading from the back door of the temple to all the gloomy buildings behind. Those most travelled led to the prisons and graves. Behind, but towering above those gloomy buildings, were the masts of a transport ship, waiting for its cargo of human misery and degradation.

In the spacious area between the back door of the temple and the gloomy building was gathered a vast crowd of officers belonging to the various establishments—policemen, with truncheons and handcuffs; poor-law officers and parish overseers, with inkhorns and certificates; judges, magistrates, and lawyers, with wigs, red bags, and briefs; surgeons, with saws, knives, ancets, stomach pumps, lint, and bandages; cunning quacks, with pills and nostrums; madhouse doctors, with straps, strait jackets, and razors; coroners, with camphor bottles and blank schedules; undertakers, with crape, weeds, black horses, dead-carts or hearses. These were so numerous as to appear like a dark forest, and were attended by the hangman, with cap and halter; grave-digger, with mattock and spade; and the priest, with surplice and book. These were all incessantly employed in the vast torrent of misery, wretchedness, and death. Reeling from the temple, smitten with every mortal woe, were ruined merchants, bankrupt tradesmen, penniless paupers, paralytics, parricides, and perjured, polluted priests; thousands rotting of a loathsome disease; myriads of females, with faces bloated, and reputation blasted; screaming maniacs, and raving furies. Others with gout, erysipelas, dyspepsia, fluxes, dysenteria, neuroses, comata, fits, convulsions, melancholy, consumption, spasms, hypochondria, idiocy, swellings, dropsy, cholera, polyidpsia, apoplexy, and many other diseases, besides the maddest of all madnesses, delirium tremens. Others with cloven skulls, gashed faces, shattered teeth, arms, ribs, and legs broken, bodies pierced and torn, throats cut, besides numberless suicides, all

> Rushing down
> The deepest depths of dark despair,
> To be with devils damned.

On the top of the temple, a giant form was pacing its ramparts; his eyes glared like balls of fire, and with infernal delight he surveyed the scenes of horror passing below. This being was the master-spirit and active agent of the establishment. His name was Apollyon; and when he spake, as speak he did, the echo of his voice seemed to reverberate from the poles:—

> "To you that malt and brew,
> And vend, and you that legislate,
> Distil, and drink, my noblest thanks
> Are due; since from my soul
> I vengeance swore against the Eternal,
> And plotted the destruction of the
> Human race, in phalanx joined,
> You gathered round, and valiantly assisted.
> Millions to my kingdom now are come,
> And millions more your noble deeds
> Shall send me there; the hosts which
> O'er the battlements of heaven with me
> Were hurled; the legions still at my command,
> Have me commissioned to return to you
> Their warmest greetings."
> Then, with a piercing laugh, the
> Sound of which sent the blood freezing
> To the heart, he disappeared, his dismal
> Work of desolation still to carry on.

A few paces from the front of the temple, on the base and up the sides of a mountain, whose top towered to the clouds, was gathered a multitude numbering ten thousand times ten thousand, and thousands of thousands. Millions of these were looking with sorrowful interest on the temple and its attendant horrors; for, strange to say, there was not one of the vast host but were involved in the consequences arising from its existence. Orphans were there, whose fathers had been executed for the murder of their mothers. Fathers were there, whose sons had been once hopeful, and on whom they had built their highest hopes and expectations, but had seen them carried to the judgment hall, or prematurely to their graves. Mothers in deepest sorrow, lamenting their daughters in the asylum and penitentiary. Sisters and brothers clothed in habiliments of mourning, indicative of family bereavement, all consequent on the havoc produced by the temple.

Dividing the front of the temple from the base of the mountain, was a beautiful river, spanned by seven artificial bridges; the name of the first was "Little-drop;" of the second, "Moderation;" the third, "Customary;" fourth, "Necessary;" fifth, "Expedient;" sixth, "Fashionable;" and seventh, "Secret." All these led from the base of the mount to the various entrances of the temple; and it was perfectly appall-

ing to see the vast crowds of people rushing over the bridges, seemingly bent on both temporal and eternal ruin.

Amongst the countless host on the mountain, thousands of bustling officers and tax-gatherers were moving to and fro, demanding from the people a per-centage on their rental for the support and maintenance of the gloomy buildings behind the temple; hundreds of thousands, yea, millions of pounds sterling was annually extorted from the hard earnings of the industrious, numbers of whom were forced to pay the last farthing, or suffer the spoiling of their goods, or imprisonment, to uphold its attendant consequences. Some asked, Is there no relief, no escape, no remedy for this terrible state of things? Shall this vampire, this hydra-headed monster, dwell in our very midst? Shall this withering, blasting, desolating hurricane still sweep over the land, and nothing be done? Shall this "Temple of Woe" still send forth its hot, pestiferous, pestilential breath, more destructive and deadly than any plague, more appalling than any scourge that ever visited fallen man since the deluge, and nothing be done? Shall legions of our fellow-men be smitten down and overwhelmed with physical, social, moral, and eternal ruin, making this otherwise beautiful world a vale of tears, and nothing be done? Let us petition Parliament to take this question into consideration, was the answer. Large sheets of paper were flying in every direction, which when covered with signatures were forwarded to the senate; but no answer. Let us request them to close the Temple of Woe on a portion of the Sabbath. A loud response reverberated through the multitude. The senate a long time hesitated, but it was done. But this made scarce a perceptible impression; the fatal consequences of its existence still rolled on. Let us send missionaries to tell them of the delusion respecting the articles in the temple being useful, and advise them only moderately to partake of them. But this was not effectual, the tide of death still rolled on. Let us send our ministers and preachers to warn the multitude of the terrible consequences arising from visiting the temple. These warnings were given, but the ministers were discovered privately entering the temple, and the people turned away from them disappointed, and the ruin still rolled on.

Let us break down the bridges and cut off the passages to the temple, was shouted by some; but a murmur was amongst the multitude, and a debate long and loud agitated the vast assembly. Some replied, Shall we destroy the Moderation bridge? Others, the Customary bridge? Others, the Necessary bridge? Others, the Fashionable bridge? Some, the Secret bridge? Many, the Expedient bridge? But a whole torrent of voices opposed the destruction of the Little-drop bridge. While they were quarrelling amongst themselves, the tide of misery still rolled on. Numbers that opposed the destruction of their own favourite bridges, expatiated largely on all commercial establishments being closed on the Sabbath and the inconsistency of the temple being open on that day, and proposed another petition to prevent it; but the vast yell of the brewers, venders, distillers, maltsters, legislators, and infidels, with numberless others interested in its existence, rendered the call for its being closed on the Sabbath for a time impossible. and the tide of misery still rolled on. Again, the demand, louder and more general, was made, that the Little-drop bridge should be destroyed; and without waiting for the consent, or caring for the scoffing, scorning, or mockings from the multitude, thousands commenced the attack, with every possible, variable, and conceivable instrument, all the while contending that this was the bridge over which all the travellers over the other bridges had first found their way to the temple, and if this should be destroyed, all the others would be deserted, and crumble into ruin. Onward they went, battering and still battering, encouraging each other, perfectly confident of success. For a long time no visible impression was made, but at length the battlements began to shake and tremble, many of the large stones cracked and tumbled down, and the bridge became so shattered that very many that would otherwise have passed over, dared not to set a foot upon it, for it was considered, by universal consent, dangerous. While the assailants vigorously and nobly pushed on their attack, reinforcements arrived from an unexpected quarter, and were greeted with loud shouts, indicative of ultimate victory.

The beautiful river, spanned by the seven bridges, and dividing the temple from the mount, was deep, and clear as crystal. Its ripples sparkled in the sun like countless diamonds. Its verdant banks were spangled with numberless flowers of every hue. Many of the trees, like the olive, were evergreen; others, towering high, mixed with the gentle breeze their odours sweet, and dropped upon its verge their luscious fruit. Extensive fields, clad with waving harvest, stretched far along the seemingly interminable shore. Cities, towns, hamlets, and cottages of peace and plenty spread far and wide. Schools, temples, domes, spires, pealing bells, and sacred songs, told that God was sought and minds were taught. No drunkeries, no policemen or bastiles were there. The whole scene, boundless as the vision, seemed indeed a land flowing with milk and honey.

The name of the country was Salem [peace],
The name of the river was Health.

While gazing on these truly happy plains, banners white as snow fluttered in the breeze, borne by the hands of a youthful army, 'midst softest music and sweetest song. The first banner bore the inscription, "The Hope of the Nation;" the second, "The Maine Law for England." As they came on in great numbers and admirable order, every countenance beamed with health and happiness. For a moment the millions on the mountain gazed on them in silence; onward still they came, and as they came they sang this song:—

We come from the banks of the health-giving river,
Where temperance spreads her mild rule o'er the plains;
We come! yes, we come! and we come to deliver
Our land from the bonds of intemperance chains.

Your sons and your daughters by millions have perish'd,
And the last ray of hope seems expiring in gloom;
For wrapp'd in the maze cruel customs have cherish'd,
Down rapids, deep rapids, they rush to their doom.

The tears of the good have dropped o'er their destruction,
And virtue in sorrow bends over the grave;
Still woe upon woe, and the direst affliction,
Roll over the myriads, and none come to save.

The pulpit is silent, or whispers its warning;
The college, too sage vulgar woes to attend;
The throne and the senate provide for destroying
The peace of the subject they vow to defend.

But hope brightly beams on the temperance horizon,
The beams of redemption illumine our shore;
The infamous dens of corruption and poison
In ruins shall perish, and ruin no more.

In God is our trust, for we war for salvation;
His presence shall shield us in battle's dread hour;
His word has proclaimed that every nation
Shall worship, adore, and acknowledge his power.

The song being ended, they formed their ranks in the shape of a crescent. A gentleman of fine intellectual mien, bold in countenance, stepped out into the midst, and addressed the multitude on the mountain as follows:—

"Sires and matrons, sons and daughters of England, ye ministers of peace, ye teachers of youth and guardians of morals, hear me. You behold yon Temple of Woe; two hundred and fifty thousand of such are scattered throughout our land, destroying more souls annually than all the home and foreign missionaries of the cross are instrumental in saving. One hundred thousand men are employed every Sabbath in preparing this liquor of death. Two hundred thousand are prevented attending the house of God, being engaged in the sale; and twenty hundred thousand every Sabbath day visit these temples. Protestant and pious Britain is annually spending half a million of money on the world's salvation, and sixty-five millions on body-and-soul-destroying strong drink. War, plague, and famine, with all their attendant horrors, do not destroy as many of the human race as this self-inflicted desolation. And if yon brilliant worlds, that move in harmony through God's illimitable universe, are but dust in the balance compared with the value of one immortal soul,

Think! oh think!—for language fails to tell—
The ruin of one soul that drops in hell!

Call us not enthusiasts. We read in the Word of Truth that drunkards shall not enter the kingdom of God, and yet how many thousands of drunkards are annually cut off in the midst of their debauchery, without a moment's warning! Ministers of Jesus, Sabbath-school teachers, men of Israel, help, for our hearts bleed at the bare contemplation of what is in actual operation. Ye venerable in Zion, you whom we have been taught to regard as Heaven's representatives on earth, we beseech you to tamper no longer with what you see is withering every prospect of your fellow-man, both for time and for eternity. Laugh not at our ardour and our earnestness; call not our projects Utopian. Medium, where ruin is pending, is madness.

"Britons and men of England in general, to you we also appeal. The law that makes these dens of infamy legal must be repealed. This monster blunder in legislation must be blotted out of our statute-book. Tell us not we are trenching on human liberty: liberty can never be given to one man for his own benefit and profit, to invade the peace and liberty of others; the keeper of the drunkery holds out every inducement to make his neighbour a madman and a pauper, and then in steps the law and compels us to support him. Is this liberty? Reason, justice, and religion are all on our side, and by your help, conquer we will."

When he had finished his speech there was great excitement upon the mountain. The hireling priests turned their backs with a snarl; the doctors and police exclaimed, "These proceedings will soon thin our numbers;" the lawyers and judges wagged their heads, declaring their craft was in danger; publicans and harlots ground their teeth in rage; but the noble, the generous, and the benevolent philanthropists made the valleys echo with their shouts of approval; amidst which, the youthful army, with flying banners, and singing their song, marched in the direction of the Little-drop bridge, which, by the assistance of those already engaged, they soon completely demolished.

After this, I saw the other six bridges gradually forsaken by travellers; the noise in the Temple ceased, the gloomy buildings behind began to tumble into ruins, the inhabitants of the beautiful plains on the banks of the river of health began to count by millions: and when in after years the aged pointed their children to the ruined bridges, temples, and gloomy buildings, they exclaimed, with hearts bounding with thankfulness, "It is the Lord's doing, and marvellous in our eyes."

J. ASHWORTH.

"*Vegetables contain all the elements and qualities necessary for the complete nutrition of man.*—Having seen that history and science bear ample testimony to the truth that vegetables *were* the original, and *are* (now as well as in former ages) the natural food of man, the inference that they are also his best food seems unavoidable; but, as evidence of a totally different nature from that already produced can be brought to prove the latter, independently of the two former propositions, the whole three may be considered established as clearly and firmly as questions of such a nature admit. First, then, we must inquire what important purposes food is designed to answer in the human economy; secondly, whether vegetables possess the elements and qualities necessary for answering those purposes; thirdly, we must ascertain whether they are easy of digestion; and, lastly, whether they are superior to animal food or a mixed diet for sustaining all the vital processes—for producing the '*mens sana in corpore sano*,' in the greatest perfection and for the longest period. [*Mr. Smith gives, in twenty-five pages, a very clear account of the constitution of vegetable and farinaceous food.*]

"The experiments of Dr. Beaumont and others prove, that when fruits, roots, and farinaceous substance have been well masticated and mixed with saliva, they are easily digested in the healthy human stomach, and answer all the purposes of complete nutrition. A short statement of facts, from Dr. Beaumont's Tables, will confirm these remarks. He informs us, that the following articles were converted into chyme, or digested, in the time mentioned:—

	H.	M.
"Rice, boiled soft	1	0
Apples, sweet and ripe	1	30
Sago, boiled	1	45
Tapioca, Barley, stale Bread, Cabbage, with Vinegar, raw, boiled Milk and Bread, and Milk, cold	2	0
Potatoes, roasted; and Parsnips, boiled	2	0
Baked Custard	2	45
Apple Dumpling	3	0
Bread-corn, baked; and Carrots, boiled	3	15
Potatoes and Turnips, boiled; Butter and Cheese	3	30
Tripe and Pigs' Feet	1	0
Venison, broiled	1	35
Cod Fish, boiled; and Eggs, raw	2	0
Turkey, Goose, and Lamb	2	30
Eggs, soft-boiled; Beef and Mutton, roast or boiled; and Oysters, raw	3	0
Boiled Pork; stewed Oysters, Eggs, hard-boiled, or fried	3	30
Domestic Fowls and Ducks, roasted	4	0
Wild Fowls; Pork, salted and boiled; Suet	4	30
Veal, roasted; Pork, and salted Beef	5	30

"Dr. James, of Wisconsin, Dr. Whitlaw, Dr. W. A. Allcott, of Boston, U.S., and many others, have both advocated and personally tried, for many years, a strictly and exclusively vegetable diet. When Boadicea, queen of the Ancient Britons, was about to engage the Romans in a pitched battle, in the days of Roman degeneracy (A.D. 61), she encouraged her army by an eloquent speech, in which she says, 'The great advantage we have over them is, that they cannot (like us) bear hunger, thirst, heat, or cold. They must have fine bread, wine,

and warm houses. To us, every herb and root are food; every juice is our oil, and every stream of water our wine.' 'In those times,' observes Lord Kaimes, 'our fathers were robust both in mind and body; and could bear, without much pain, what would totally overwhelm us.' A considerable proportion of the labourers in various parts of England and Wales, even at the present day, eat but little animal food; and, about seventy or eighty years ago, the principal part of the labour in this country was performed by those who seldom or ever tasted flesh-meat. The hardy Scotch, also, are almost exclusively confined in their diet to the productions of the field and garden. 'So late as 1763,' says Mr. McCulloch, 'the slaughter of bullocks for the supply of the public markets was a thing wholly unknown even in Glasgow, though the city had then a population of nearly 30,000!' The Lazzaroni of Naples are a tall, stout, well-formed, robust, and active class of people; and yet subsist chiefly on coarse bread and potatoes; and their drink of luxury is a glass of iced water, slightly acidulated.

"In France, a vegetable diet prevails to a very great extent. M. Dupin informs us that two-thirds of the French people, to this day, are wholly deprived of animal food; and live on chestnuts, or maize, or potatoes. The peasantry of Norway, Sweden, Russia, Denmark, Poland, Germany, Turkey, Greece, Switzerland, Spain, Portugal, and of almost every other country in Europe, subsist principally, and most of them entirely on vegetable food. It has been observed, that 'from two-thirds to three-fourths of the whole human family, from the creation of the species to the present moment, have subsisted entirely, or nearly so, on vegetable food; and always when their alimentary supplies of this kind have been abundant and of a good quality, and their habits have been in other respects correct, they have been well nourished and well sustained in all the physiological interests of their nature.'

"Dr. Adam Smith, in his 'Wealth of Nations,' says:—'It may indeed be doubted, whether butcher's-meat is anywhere a necessary of life. Grain and other vegetables, with the help of milk, cheese, and butter, or oil (where butter is not to be had), it is known from experience can, without any butcher's-meat, afford the most plentiful, the most wholesome, the most nourishing, and the most invigorating diet.'

"Mr. W. Fairbairn, of Manchester, in the 'Report on the Sanitary Condition of the Labouring Population of Great Britain, says:—'I observed, on a late journey to Constantinople, that the boatmen or rowers of the caiques, who are, perhaps, the first rowers in the world, drink nothing but water; and they drink that profusely during the hot months of the summer. The boatmen and water-carriers of Constantinople are decidedly, in my opinion, the finest men in Europe, as regards their physical development; and they are all water-drinkers: they may take a little sherbet; but, in other respects, are what we should call, in this country, "Teetotallers." Their diet is chiefly bread; now and then, a cucumber, with cherries, figs, dates, mulberries, or other fruits which are abundant there; now and then, a little fish: occasionally, I believe, they eat the flesh of goats; but I never saw them eating any other than the diet I have described. They eat about the same amount as European workmen; but, if anything, are more moderate as respects quantity.'

"Sir Francis Head informs us, that immense loads are carried by the South American miners, though fed entirely on grain and pulse. 'It is usual for the copper-miners of Central Chili to carry loads of ore of 200lbs. weight up eighty

perpendicular yards, twelve times a day. When they reach the mouth of the pit, they are in a state of apparent fearful exhaustion, covered with perspiration, their chests heaving; yet after briefly resting, they descend again. Their diet is entirely vegetable: breakfast consists of sixteen figs and two small loaves of bread; dinner, boiled beans; supper, roasted wheat grain. They scarcely ever taste meat; yet on this simple diet they perform a labour that would almost kill many men.' 'The diet of the Affghan consists of bread, curdled milk, and water. He lives in a climate which often produces in one day extreme heat and cold; he will undergo as much fatigue, and exert as much strength, as the porters of London, who are fed on flesh and ale; neither is he subject to their acute and obstinate disorders.' An officer of a frigate who had been at the Sandwich Islands has declared that our sailors stood no chance in boxing with the natives, who fight precisely in the English manner. A quartermaster, a very stout man, and a skilful boxer, indignant at seeing his companions knocked about with so little ceremony, determined to try a round or two with one of the stoutest of the natives, although strongly dissuaded from the attempt by his officers. The blood of the native islander being warmed by the opposition of a few minutes, he broke through all the guards of his antagonist, seized him by the thigh and shoulder, threw him up, and held him with extended arms over his head for a minute, in token of triumph, and then dashed him on the deck with such violence as to fracture his skull. The gentleman added, that he never saw men apparently possessed of such muscular strength. Our stoutest sailors appeared mere shrimps compared with them. Their mode of life, constantly in vigorous action in the open air, and undebilitated by the use of stimulating food or drink, may be considered as a perpetual state of training. Examples might be multiplied, from all parts of the world, of people living entirely upon vegetable food, and enjoying perfect health and bodily vigour; but perhaps none are more striking than those we have in close proximity to us. 'The chairmen, porters, and coal-heavers, the strongest men in the British dominions, are said to be, the greater part of them, from the lowest rank in Ireland, which are generally fed with the potato. No food can afford a more decisive proof of its nourishing quality, or of its being peculiarly suitable to the health of the human constitution.' This remark has been amply confirmed by the recent experiments of Professor Forbes, on the weight, height, and strength of above eight hundred individuals;—his tables clearly showing that the Irish are more developed than the Scotch at a given age, and the English less.

"Mr. Brindley, a celebrated canal engineer in this country, informs us, that in the various works in which he has been engaged—where, the workmen being paid by the piece, each exerted himself to earn as much as possible—men from the north of Lancashire and Yorkshire, who adhered to their customary diet of oat-cake and hasty pudding, with water for their drink, sustained more labour, and made greater wages, than those who lived on bread, cheese, bacon, and beer—the general diet of labourers in the South. Diseases of the liver are much more common where a flesh diet abounds. Dr. Copland informs us that 'eating largely or frequently, especially of animal, rich, and highly seasoned food—stimulating the appetite by a variety of incongruous dishes and sauces, and spices and wines, particularly in warm countries and seasons—are most influential causes of these disorders.' We have known various persons who have been delivered from painful and obstinate disorders by giving up the use of animal food entirely; and others in whom disorders of the nervous system and the chest had been very much relieved by the same procedure.

"Dr. Caleb Bannister, of Phelps (N.Y.), whose ancestors, it appears, had all died of hereditary consumption, states as follows:—'At the age of twenty, I began to be afflicted with pain in different parts of the thorax, and other premonitory symptoms of phthisis pulmonalis. Having a severe attack of ague and fever, all my consumptive symptoms became greatly aggravated; the pain was shifting, sometimes between the shoulders, sometimes in the side or breast, &c.

After enumerating various other symptoms (such as irritable pulse, &c.), and stating that his life was despaired of, he says :—'I was induced to try a milk-diet, and succeeded in regaining my health ; so that, for twenty-four years, I have been entirely free from any symptom of phthisis.'

"'It will not be disputed,' says Dr. Lambe, 'that, for consumptive symptoms, a vegetable diet, or at least a vegetable and milk diet, is the most proper.' Dr. Buchan again observes :—'When there is a tendency to consumption in the young, it should be counteracted by strictly adhering to a diet of the farinacea and ripe fruits. Animal food and fermented liquors ought to be rigidly prohibited; even milk often proves too nutritious.' Scrofula, cancer, scurvy, epilepsy, dysentery, inflammation, ulcers, &c., may be included among the diseases which are greatly relieved, if not cured, by vegetable diet; as the ensuing facts attest. Dr. N. J. Knight, of Truro, records the following case :—'Mrs. A., infected with scrofula of the left breast, and in a state of ulceration, applied to me two years ago. The ulcer was then the size of a half-dollar, and discharged a considerable quantity of imperfect pus. The axillary glands were much enlarged ; and, doubting the practicability of operating with the knife in such cases, I told her the danger of her disease, and ordered her to subsist upon bread and milk, and some fruit, drink water, and keep the body of as uniform temperature as possible. I ordered the sore to be kept clean, by ablutions of tepid water. In less than three months the ulcer was healed, and her general health much improved. The axillary glands are still enlarged, though less so than formerly. She still lives simply, and enjoys good health; but she tells me, if she tastes flesh meat, it produces a twinging in the breast.' A physician, in answer to Dr. North, states that he had been subject to severe attacks of epilepsy ; but, having maintained a total abstinence from flesh, fish, and fowl for two years and a-half, he had been entirely free from any attack.

"Dr. Cheyne relates a remarkable cure of epilepsy, in the case of Dr. Taylor, who was for a long time dreadfully afflicted with epileptic fits. He tried the effects of medicine, and consulted all the most eminent of his brethren of the medical profession in and about London ; but obtained no relief. At last he was obliged to follow the advice of Dr. Sydenham, whose works he had studied. He first discontinued the use of all fermented and distilled liquors ; then, finding his fits become less frequent and less violent, he gave up all animal food, and confined himself entirely to cow's milk. In the course of a year or two he was perfectly cured, and for seventeen years enjoyed as good health as human nature is capable of. But the most remarkable cure of this kind is recorded in the *Lancet* for May 14, 1842, by Mr. S. Rowbotham, surgeon, of Stockport. The son of a Mr. Fielding, of that town, about three years old, had been ill eighteen months. He was covered from head to foot with ulcers; his eyes, nose, ears, mouth, and, in fact, his whole head and face, were involved in one complete mass of fetid running sores and ulcers; and the lower part of his body was equally bad, so that his little thighs seemed nearly separating from his body. For more than twelve months he had been quite blind, and had never been able to sit down, even on a pillow, but stood upon his foot, and leaned with his elbow upon the nurse—except at times, when he was able to kneel on a pillow : he had scarcely been able to lie in bed for the same period. Eight of the most eminent medical men had given him up as incurable ; and some of them declared that no known mortal power could even *improve* his condition, much less effect a cure. 'From certain views which I held on the origin of disease,' says Mr. Rowbotham, 'I was induced to recommend a diet consisting almost entirely of ripe fruits and honey, or sugar and treacle. The child commenced this diet on the 13th of September, 1841: he had stewed fruits, mixed with sugar or honey, to all his meals, and was allowed frequently to eat grapes, cherries, plums, apples, pears, and such other fruits as could be obtained. On the 16th the sores on his back were beginning to disappear; on the 23rd, he

was very sensibly improved; on the 30th, one-half of his face was clear; the lower parts of his body were much better; and he could sit in a chair, and lie comfortably in bed. He continued daily to improve, till at last his eyes opened; but they were at first very weak; and he could scarcely see anything: his sight, however, gradually improved. On the 1st of January, 1842, not a single ulcer remained on his body: the skin became remarkably clear and fair, and the features, which for twelve months had been in such a state that it was impossible to more than guess at the position of his nose and eyes, were restored to their wonted appearance.'

"Adam Smith, in his 'Wealth of Nations,' informs us that the most beautiful women in the British dominions are said to be, the greater part of them, from the lower rank of people in Ireland, who are generally fed with potatoes. The peasantry of Lancashire and Cheshire, also, who live principally on potatoes and buttermilk, are celebrated as the handsomest race in England.

"Mr. Shillitoe, of Tottenham—a member of the Society of Friends—when about forty-five years of age, had suffered from ill health during many years; and was restored by adopting a vegetable diet, and water for drink. He lived till nearly ninety years of age; and at eighty could walk, with ease, from Tottenham to London (six miles) and back again. He gives the following account of himself:—'It is now thirty years since I ate fish, flesh, or fowl; or took fermented liquor of any kind whatever. I find, from continued experience, that abstinence is the best medicine. I do not meddle with fermented liquors of any kind, even as medicine. I find I am capable of doing better without them.'"

ALL PRIZE CATTLE DISEASED.—*From the Vegetarian Messenger, price 2d. Pitman, London.* "Once again we have a striking communication made to the public on the subject of the disease originated in the process of fattening animals. Scientific and other observant men have frequently thrown out that the animal is 'fattened' only at the expense of its health, and that as there are no fat animals in a state of nature, so the processes resorted to to make up the prize-fed monstrosities of Smithfield are immensely against the interests of the consumer of the flesh of animals.

"'A question of much interest to the breeders of cattle, judges at exhibitions of stock, and the public, has been raised by Mr. Gant, a London surgeon. It appears that he was struck with the appearance of some of the prize animals at the late Smithfield Cattle Show, several of which also took honours at Birmingham; he followed them to the slaughter-house, and, as the result of dissection and microscopical observations, discovered that the hearts and proper muscular structure, the nutritious parts, were degenerated into unhealthy fat and oil globules, and that the lungs were the seat of extensively deposited tubercular disease, of a similar structure to that form of deposit usually found in scrofulous and phthisical subjects. This discovery, although not made for the first time, puts the matter in a light so serious as to command attention. It would seem also to point to the necessity for a change in the standard of what judges generally consider excellence.'

"We beg to call attention to the more complete explication of the above, as found in our present number. Whitlaw and others long since declared similar facts; but, now, with the stamp of greater authority, we may reasonably hope that Mr. Gant's researches will be made valuable to the public."

The Russians are practical Vegetarians. The hosts of workmen employed on the great public works of the empire subsist in summer on cucumbers and rye bread; and in winter the cucumbers are salted and eked out with chestnuts.

The prowess of the Russian soldier England and France have had melancholy occasion to test, and the *Times* correspondent in the Crimea was amazed to find that desperate wounds, which would have been the death of a flesh-eating Englishman or Frenchman, *did not* kill the Russian, whose food was coarse black bread, with oil and salt. And the case is the same with the Russian peasantry, from whence workman and soldier are drawn. Their general food is coarse black bread and garlic. A finer people, physically, all unite to say, there is not. In a climate severely cold they enjoy health and vigour; and, as one of the fairest tests of national well-being, they rapidly increase in numbers. Spite of national jealousy, Russia is on the highway to greatness, and the future will, I have no doubt, find it one of the most useful and influential powers among the kingdoms of the earth; and while we cannot but profit by Russian prosperity and enlightenment, there is surely room enough in this wide world for the development of all without either trenching on the domains of the other. The Norwegian winter, as all know, is a severe one; but the Norwegians, like the Russians, are practical vegetarians. They do eat flesh when they can get it, but that is but rarely, and is then eaten as a luxury, much as plum-pudding is by poor people in England. Yet the Norwegians, on their oatmeal and rye-meal, are robust and healthy, tall and good-looking, and in no European nation are there more instances of extreme longevity. One fact, if reliable, is as good as twenty in proving our point, and facts might be adduced to tedium to show that the heat of the human body can be sustained in severe cold on the products of the vegetable kingdom, especially cereals. In Siberia no exiles in that wintry region endure the cold better than those who have been accustomed to a simple vegetable diet; and the Hudson's Bay Company have discovered that 2½lbs. of maize meal per day sustains the warmth and energy of their servants quite as well as the 8lbs. of fat flesh-meat formerly used, whilst the men themselves prefer it. Facts like these dispose of the common argument constantly brought against vegetarians, about their system being impossible in cold climates. But, supposing it were as true as it is false that men could not live in severe cold without flesh or fat, why should that hinder any one from adopting a vegetarian diet in the mild climate of England?—a diet recommending itself by its economy to the prudence, its pleasantness to the palate, and its innocent attainment to the benevolence and all the best feelings of man's nature. Why should any one make a supposed difficulty in the Arctic zone restrain him from a clear duty in Manchester or London? As Mr. Simpson, in a lecture, once pertinently asked, "Will you defer your acceptance of Christianity until every rascal and every heathen has found it convenient to acknowledge its divine claim?" Do let us do right ourselves. The right is ever full of happiness and blessing.

(*Workman ruined for life, age* 34.)

"Mr. Joseph Martin has always been a stout, healthy man, remarkably strong constitution, never addicted to drink or tobacco, a joiner by trade, being exposed to cold and the trade brought on rheumatic, but never to prevent him from following his employ. About two years ago he left off work through cold, suffering from rheumatic in right side. Recovered from that and went to work again for two months; then seized with inflammation of the eyes, blind in both eyes. Placed himself under a medical man, who applied leeches and blisters and also salivated him. In about five weeks he again tried work, but was obliged to give up. Then made another attempt and was again thrown back, and blind again, and was salivated again. Felt the right side to give way—the same side he had the rheumatism. Considered it best to leave Manchester and come to his own country. Had a fourth attack in the eyes; then placed himself under a physician, Dr. ——. He repeated the blisters, salivating, burning the eyes with caustic, &c. The eyes have been bad ever since, with a very bad pain in the sockets, and also in the side; the right side paralysed, unable to work."

MORNING WORSHIP IN OUR MARQUEE AT LEA MILLS.

THE FOLLOWING ARTICLES ARE SUBJECTS OF THE MOST VITAL IMPORTANCE FOR EVERY PERSON TO STUDY.

THE following summary of a lecture given by Dr. —— is a subject of the most vital importance to the well-being of mankind. It is a subject that should be deeply and observantly studied by both the medical profession and the public at large. A thorough acquaintance with the idiosyncrasies of constitutional peculiarities would prevent the profession giving medicine at random, as is universally the case. The many functional derangements have often their origin in constitutional peculiarities, but the same medicine and the same quantity is generally administered to all alike. On some constitutions mercury has a frightful effect. I have known more than one patient destroyed by a single dose of mercury, strychnine, or arsenic; death has not been immediate, but the effects of the dose have led to death. One striking case:—A gentleman, aged 54, had been to a corporation dinner; was seized with sickness about two a.m. The doctor recklessly gave arsenic. This led eventually to cancer of the stomach, from the high nervous temperament of the patient. No doubt the doctor had given the same dose before without producing the same effect, but just as in the case of Miss Fowler, the banker's daughter, who was killed by an application of corrosive sublimate to the scalp for ringworm, the dose prescribed killed the case. The doctor quoted his authority, and the M.D. justified the course by his former experience and practice, yet it was admitted by the doctors at the inquest the dose killed instead of cured. The reason given was that the young lady had peculiarities in her constitution the doctor was not aware of. Another case:—A family man took typhus fever. A powerful dose of calomel was administered by a doctor—the highest authority in the city. The patient never rallied, but died, left a widow and young family: the widow took to brandy to stifle her grief; and she died shortly after, leaving four orphans. All this misery caused by an over-dose of calomel! Several cases where strychnine has been given have brought on involuntary twitchings we could give no relief to, nor is it possible—they will go on as long as life lasts. In the first case named, rinsing the stomach out with warm water would have put the patient right by morning,

as I have personally experienced. I drank a quantity of warm water, and made myself sick. I then put on my spongio body bandage slightly sponged, and was quite ready for a good breakfast next morning. How is it possible the stomach can escape injury by arsenic, antimony, and other anti-vital compounds? And it is admitted that in some peculiar cases drugs are fatal; but the fatal belief in drugs will carry the day, except by a few thinkers and reasoners, notwithstanding people see and feel the fatal effects.

But to return to the subject of the lecture. What reason there is for deep thought and consideration in forming marriage ties, and also in persons studying their own inherited peculiarities, and being on their guard in self-management! Neurotic or nervous temperaments might be saved from insanity by abstinence from stimulants and exciting pursuits; but here Dr. —— follows the usual unpractical course of physiologists, merely stating the case, without advising the application of the discoveries for practical benefit to the human race; the fact is, he dared not show the effects of his magazine of drugs in such cases. Why did he not caution neurotic cases to restrain their inherited ardent temperaments, and avoid anything that would spur on the thorough-bred animal beyond the powers Nature has given him?

Dr. A——, in the foregoing able address, has omitted some very apposite and fundamental remarks on the effect of the modern inventions of medicine—the strychnine, bromide of potassium, belladonna, henbane, opium in its various forms, the new and awfully destructive invention of hydrate of chloral, chlorodyne (spirits of wine and opium)—and the vast importance of total abstinence from stimulating drink, which is certain destruction to nervous temperaments, and also to others, causing softening of the brain and paralysis—which is now making drunkards of many a female formerly ignorant of such devices for unnaturally stimulating a jaded frame. These and almost numberless compounds have been invented by the science of modern practitioners, and fully account for a great portion of what Dr. A—— terms neurotic or nervous temperaments and extinction of race. The administration of stimulants to patients has arrived at such a pitch as to excite strong remonstrances from some of the leading practitioners and the organs of the medical profession. A celebrated M.D. has written a work on the benefit to be derived from the use of stimulants, yet in a later publication he says they should not be administered to females under eighteen!! The fact is well known, and discussed in the newspapers, that drinking to excess is awfully prevalent in society, and especially amongst females; and it is no wonder, when port wine, brandy, and the insidious chlorodyne is freely prescribed by medical men. My wife has had numbers of females under her care for delirium tremens—many who took no stimulants till ordered by the doctor, but once began they had not power to stop. The doctor should have honestly said what he well knows is a great cause of degeneracy of race and hereditary transmission.

It is often stated by the profession that their patients cannot stand the doses which were formerly given. They say society is degenerating, but it is a question for consideration if their newly-invented scientific compounds, so freely given, are not the cause of the degeneration. Witness some very nervous, excitable old maid, who has a horror of strong drink or physic, who lives on plain food, tea, or water; and how many such never have a day's illness, and live tediously long for those who are waiting for their money. See old men, with a wiry and nervous temperament, who have never been able to get what is called good living, and no means to pay for scientific medicine. They are spared the bromide, the strychnine, the chlorodyne, and a thousand other poisonous inventions, and whatever infirmities their an estors possessed are not developed, from their natural, sensible course of life.

The internal use of caustic to females extinguishes race, but it is yet practised, with other internal destructive operations. We have had above twenty-

five thousand patients since we began our Hydropathic establishment; scarcely one has come who has not tried the medical profession, and in a vast majority of cases been pronounced incurable, yet with our natural means have recovered; many an amputation saved; and all instructed how to live to perform the duties of life in usefulness and comfort. A great number of medical men have here been restored to health when they considered their case hopeless of cure by their practice. We have thousands of testimonies, and yet we have never used any medicine whatever, no blisters, setons, or any internal application of caustic alum, &c., &c.

THE MEDICAL CONVERSAZIONE AT THE WEST RIDING ASYLUM.

October 18, 1871.

In our last issue we gave a brief account of the interesting gathering which had taken place at the West Riding Asylum on the previous night. We were prevented, by want of space, from giving even a short account of the able lecture delivered by Dr. ——, on a subject to which the medical profession is beginning to give very serious attention, "The Hereditary Connections between certain Nervous Diseases." Being a question which affects the well-being of the public at large, we think the following remarks will be found interesting by our readers. Dr. ——, in commencing, said:—

"Although I fear I have been guilty of something like presumption in accepting Dr. ——'s friendly invitation to address you, I cannot honestly say that I regret my indiscretion. It is to me a great pleasure to have the opportunity of speaking to a number of my professional brethren on the subject of my lecture; a subject whose vastness, and far-reaching connections with the problems, not only of practical medicine, but also of physical and mental education for the young, are daily presented to my own mind with increasing force by the facts which I observe in hospital and private practice. The inheritance of the neurotic or nervous temperament, with its ever-shifting modifications and transformations of outward form, I need hardly tell you is not exactly a new discovery, as far as systematic research goes. Commenced by Morel, in his treatise, *Des Dégénérescences Humaines*, the investigation of hereditary neurosis has been since carried on by various observers, and has been specially illustrated by one of the most eminent alienists of the present day, Dr. Maudsley; and it has now been sufficiently demonstrated, in a general way, that there is handed down, in certain families, a tendency of the individual members to inherit from their parents either a particular nervous disease—for instance, insanity—from which they suffered; or else, and this quite as frequently, some other disease of the nervous system. Thus it often happens, in these neurotic families, that an insane progenitor will endow considerable numbers of his descendants respectively with epilepsy, with neuralgia, with insanity, with invincible tendencies to drink, with brain-softening, or with chorea; the more fortunate of his descendants escaping with only some more or less strongly marked irritability of the nervous system, which may express itself chiefly in mental sensitiveness and impulsiveness, or in the existence of some slight local spasmodic affection, or in a general eccentricity of character which it is impossible to define. Or it may be that the vicious circle of nervous degeneration began at an earlier stage; for instance, the insane progenitor was himself the child of a drunkard, whose habitual intemperance was the starting-point—as there is reason to believe it often is the starting-point—of a lowered nervous organisation of the family stock, which will show itself in the various ways already mentioned. These general facts are doubtless familiar to your minds, and you are also well aware that this sad inheritance is a curse that seems to fall with

special weight upon families, many of whose members are of a mental calibre that would fit them to be the salt of the earth; possessing quickness of insight, original cast of thought, genius for mechanical inventions, or it may be delicate artistic faculties. These are the men that really make the world march; it is they who give society its impulses to progress of all kinds; but, unhappily, it must be also said that they are too frequently the victims of their inherited temperament, and that their lives, even when they are not interrupted by any positive catastrophe, are too often overshadowed by the gloom of hypochondriasis, or poisoned by some unhappy intellectual or moral weakness, which may be known only to themselves, but is to themselves a perpetual misery, perhaps even a perpetual terror. [*How many such cases are driven to suicide by the action of the terrible drugs on such highly nervous temperaments! The talented soul finds the tenement unendurable.*] Of course I am not here referring to the possessors of the highest kind of genius, that rare excellence which flowers only once or twice in a century of a nation's history. Such natures are calm and strong, the typical embodiment of the *mens sana in corpore sano* at its highest and best. Your Shakespeare or your Goethe is no weakling. But, unhappily, it is not such as these that bear the heat and burden of modern progress. And among the men of second rank, upon whom that burden actually falls, a lamentable number are the victims of that inherited defect of nervous balance which is at the foundation of those associated hereditary neuroses, respecting which I ask permission to say a few words to you. And if we further reflect on the fact that for one such partial, even if brilliant and useful, success as nature achieves in the persons of these neurotic men and women of talent, she probably makes at least two failures in the shape of their relatives, who are nervous but not talented, we cannot avoid the conviction that the subject of inherited neurosis is one of the most important that could engage the attention either of the physician or of the student of social science. It was not with any intention, however, of enlarging in general terms upon this vast subject that I came here to-night; it seemed much more practical to select for discussion certain special aspects of the hereditary neurosis, which circumstances have given me large opportunities of studying. It is now nearly fourteen years since my attention was first actively directed to the study of nervous diseases, and during that time I have preserved, with a greater amount of care than I have been able to give to the records of any other class of medical facts, such particulars as could be obtained from apparently trustworthy sources as to the personal and the family history of nervous patients coming under my care in dispensary, hospital out-patient, and private practice. In fact, I had been engaged for some considerable time in this investigation before I read the treatises of Morel and Moreau, of Tours, and before Dr. Maudsley's book was published, although these works greatly enlarged my view of the importance of the subject. But although I have thus had both the inclination and, in considerable measure, the opportunity to work out these questions with reference to actual patients, it has happened, as is probably the case with almost every inquirer, that experience has come to one in a very unequal fashion, allowing me to collect a greatly larger mass of information respecting certain kinds of nervous diseases than respecting others. For example, with regard to alcoholism, epilepsy, neuralgia of all kinds (including angina pectoris), and spasmodic asthma, my historic data are on a really large scale; with respect to insanity they are considerable; but with regard to other forms of nervous disease they are by no means so extensive. * * * * * * The point which I desire specially to bring before you is this:— I believe that there are two chief varieties, or degrees if you will, of the neurotic inheritance, which it is of great importance that we should discriminate from each other. I shall call the first one, for this occasion at any rate,

the active hereditary neurosis, and the second I shall call the dormant hereditary neurosis. 1.—The manifestations of the active hereditary neurosis are so remarkable, and so patent in many cases, that the only wonder is that they should have remained without anything like scientific classification until quite recent times. You all remember the standard example, doubtless a somewhat extreme one, which Morel gives in his work, of extreme intemperance in a great-grandfather leading to a series of severe neurotic catastrophes in successive generations of his descendants, ending with sterile idiocy of the great-grandchildren, and extinction of the race. It is, of course, impossible to know whether the intemperate progenitor was not himself descended from a stock already strongly tainted with neurotic imperfection; but it is evident, from Morel's account, that his habits at least prodigiously accelerated the degeneration of his race. And I am inclined to believe, from my own observation, that alcohol, of all depressing agencies, has the most decided power to impress the nervous centres of a progenitor with a neurotic type which will necessarily be transmitted under varied forms and with increasing fatality to his descendants. I suspect, and for reasons which are none the less genuine that it is impossible to produce them in detail, that there are multitudes of families of the higher classes now suffering from, and that multitudes more have been first decimated and finally extinguished by, fatally progressive neuroses that had their origin simply in the reckless port wine-drinking that was in fashion for three successive generations, after our idiotic statesman practically excluded the lighter French wines from the English market. It is the old story, that "the fathers have eaten sour grapes, and the children's teeth are set on edge." Here is one case, which I select from a list, that I have published in my work on neuralgia. The patient was a gentleman aged fifty-four, who applied to me on account of exceedingly severe neuralgia of the third division of the fifth: he was himself a great drinker, and drinking had been hereditary in his family for several generations. His grandfather had become epileptic; his father died insane; a sister was consumptive; and two brothers very eccentric. I considered that the family was likely to be extinguished in the next generation, so completely had the type become degraded, so incompetent did the race appear to produce even a single individual whose nervous centres came up to an average standard of organisation. * * * * * No doubt, the degrading influence of alcohol upon the nervous centres rarely stands alone; there is very frequently simultaneous indulgence in other exhausting vices, and still more often there is, at least, the negative evil, that the drinker ceases to cultivate any of the higher intellectual or emotional faculties, which accordingly dwindle in comparison with the merely appetitive nature. There is some degree of doubt in my mind whether the active hereditary neurosis is ever originated in a family stock, except by one of four causes—the first is drink, of which we have spoken; the second is extreme sexual excess, but it may well be doubted if that, unaided, is capable of imparting the stamp of progressive degeneration on a race; the third is habitual and long-continued insufficiency of food, a most potent cause, undoubtedly; the fourth, which unhappily is often added to the third, is total vacancy of mind from the want of education. A Wiltshire or Dorsetshire farm labourer, on eight shillings a week, offers a painfully vivid illustration of these conditions. Any one of these causes, however, is decidedly capable, at any rate, in a generation or two, of fatally perverting the organisation of the nervous system, and evoking the active hereditary neurosis. * * * * I ask you now to consider with me another type of hereditary neurosis, which I call dormant. The milder instances of the active hereditary neurosis may at any time assume this form, through the continued agency of sundry favouring influences which I shall presently

refer to. There is, we may be glad to think, a *locus penetentiæ*, a chance of escape, for many a family that seems doomed to hopeless nervous degeneration, down to a point at which extinction would be the kindest fate. But although, under certain instances, there can be no doubt that a degenerative neurosis, not too far advanced, may be arrested for long periods, there can be no certainty, I believe, that the operation of certain kinds of morbid causes may not cause the hereditary tendency to reassert itself in an individual descendant, and even in cases where that original stock has not been considerably modified by new blood, again transmit itself to his descendants. I grant that the proof of the existence of this variety of hereditary neurosis is less easy than is the proof of that of the active type; but the following considerations seem to afford very powerful arguments in its favour. In the first place, as to the probabilities from analogy, I think there can be little doubt. Every step that we take in the improvement of biological science seems to bring us nearer to an unreserved acknowledgment of the imperishable nature of the marks left by ancestors upon their descendants. They may be concealed, but they are not destroyed. You shall take some trivial matter that distinguishes a man, some slight turn of a feature, some petty muscular trick even. You shall observe it disappear utterly in his immediate offspring, and then your successors, if they watch closely, may find it turning up in his granddaughter's child. I could cite such instances in plenty; one or two of them within my own knowledge; and so, no doubt could many of my audience. * * * * * * There is one example that I would especially press upon your notice, viz., the phenomena of true dipsomania, or cinomania. I do not mean the ordinary weakness of yielding gradually to the temptation of drink, but that much more singular affection in which the patient is periodically liable to unaccountable outbursts of drinking, which are in absolute and most hideous contrast with the remainder of his conduct in life. It seems to me that this is a striking example of that imperishable organic memory of the body, the existence of which Dr. Maudsley has so forcibly vindicated; for although I have seen a considerable number of these cases, I have never met with a single one in which there had not been both drunkenness, and at least mental eccentricity, if not downright insanity, among the ancestors of the patient. In one case of the sort I was much struck by the fact that we had to search far back before we came to the intemperate ancestor, but that when we had discovered him there was no doubt whatever of his influence upon the nervous type of the family organisation. Fortunately that influence though extensive, and affecting, many individuals, was evidently not of the highest grade of strength, for I could find no positive insanity among the descendants of this forgotten drinker. And to this fact I have felt myself compelled to attribute the recovery of my patient, which is the solitary instance of the kind that I have ever known. Your true cinomaniac, as distinguished from your ordinary drinking sot, scarcely ever shakes himself free of his tendency; but then he almost invariably belongs to a race that has already been degenerated to the point which is marked by the frequent outbreak of insanity among its members. It appears important to inquire, first, What are the signs, if any, of the dormant hereditary neurosis in individual persons; and secondly, What are the influences which have special power to bring out the hidden mischief? * * * * Now, as tending to prove that there is such a thing as a dormant hereditary neurosis, I would point attention to the fact that among families of which the prevailing sexual temperament is decidedly calm, we occasionally meet with a child (I have a recently-observed instance in my mind at this moment), who, upon the smallest provocation, or no provocation at all, takes to sexual thoughts and sexual acts with the energy of a demon. I believe that such an occurrence is no more an unmeaning result of chance, than is the

inflammation of the stomach which follows a drink of strong sulphuric acid. I believe that such an occurrence marks distinctly the fact that the old stain left upon the family organisation by some forgotten drunkard or lecher of the race is not wiped out, that for the individual himself there is certainly, and that for other members of the family there is possibly, neurotic danger looming in the future. Among the signs that the neurotic temperament, previously dormant in the family is about to reappear, I am afraid we must also, however reluctantly, notice the unexpected development of intense artistic feeling in children born of a family who are naturally commonplace and prosaic. It is, however, a far less serious indication prognostically than is sexual precocity, for it admits of being turned to excellent account in the prophylactic treatment, if rightly managed. The other grand indication of the revival of a hitherto dormant neurosis in a family, is the seemingly causeless occurrence of convulsions during dentition, in a child whose brothers and sisters altogether escape the infliction, it being of course assumed that there are none of the ordinary and well-understood accidental causes at work. * * * * * And now as regards the circumstances that especially tend to bring out the hidden mischief of a dormant neurosis, with certainly evil results to the individual, and with the possible resurrection of an active hereditary neurosis, once more casting abroad its "arrows, firebrands, and death," among a family that may have seemed to have escaped its dangers. Time forces me to be very brief, but I shall specify the following: first—deficient nutrition in childhood; secondly—preponderance of emotion over steady intellectual work, in the ordinary brain-life of an individual; thirdly—the occurrence of phthisis more especially, but also of any disease which involves, by protracted suppuration, or in any other way excited, a prolonged and steady depressive action on nutrition.

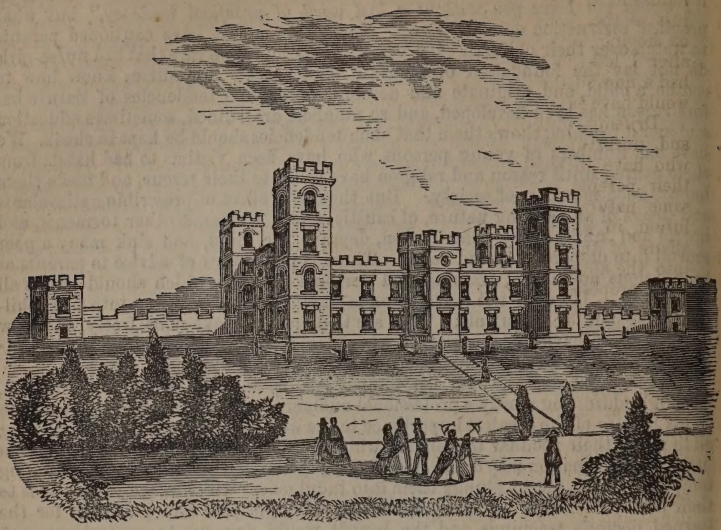
Dr. —— devoted considerable time to the elucidation of these four points, and concluded as follows:—"Time fails me, gentlemen, or I should dearly like to enter on a discussion, without which my previous remarks must needs seem incomplete, as to the educational prophylaxis—bodily and mental—which these views of hereditary neurosis, the dormant, and still more the declared, irresistibly suggest. I must reluctantly withhold them, but I would not leave you without a last word of practical tendency. To some minds, and those amongst the most powerful in our profession, there is nothing but hopeless gloom in the prospect which these terrible facts of hereditary neurosis seem to present. It seems to them as if the tyranny of our organisation is to be not merely tremendous, but altogether irresistible, as if our whole moral and physical nature were the mere sport and toy of an inexorable fate. I cannot hold these opinions; and so far from shrinking from the analysis of the fact on account of their fancied logical result, I believe that we may already see in such vices as I have presented to you to-night the foreshadowing of a far more potent organisation of our prophylactic and therapeutic resources against nervous disease than we have ever yet witnessed; and that in our increased knowledge now, and still more in the future, there is a true pledge of emancipation for the human race from some of the most painful consequences of the neurotic inheritance."

The enunciation of such doctrines by men in such eminent positions is most deplorable, and reproachful in the last degree to the attributes of a beneficent Creator; nor are such doctrines sound or true—that mankind are born with the "*hopeless gloom which the prospect of these hereditary neuroses seem to present*," and that the "*tyranny of our organisation is to be not merely tremendous, but altogether irresistible.*" The law holds in check thousands whose "*hereditary tendencies*," or what is more true, propensities from bad bringing up, would thieve and commit immorality, but these tendencies are not irresistible, because of the fear of consequences; others, who have had careful training, have a degree of hereditary tendencies of a corrupt nature, but religion enables them to

conquer them; they do not find them "*irresistible.*" The learned doctor says, "*I would not leave you without a last word of practical tendency,*" but what practical instruction does he give? None. He might have cautioned parents to watch over their children even when infants, and take care that bad nurse-girls do not lay the foundation of neurotic tendencies. The nurses know how to soothe a child, and originate and develop the sensual tendencies of nature before reason has been developed, and so numbers are ruined, sometimes education and moral teaching shows them that such tendencies should be kept in check. We have had numbers of young persons who have been victims to bad habits from these causes, until reason and religion have come to their rescue, and made them happy, good members of society. But the awful effect of prescribing stimulants and drugs of an exciting nature, of caustic, and a thousand other torments, and horrid and unnecessary examination, deprave the mind, and sink many a poor mortal into despondency and death. There is not a word of advice to parents as to religious and moral training and personal example, which should crown all instruction. He does not warn parents against early instilling into their children a passion for stimulants. They see their parents take wine freely, and how often children have their miniature wine-glass! And so the "*tyranny of our organisation*" is developed and fixed, to the ruin of the young.

The learned doctor, with his unquestionable talent and patient research, although addressing mostly a professional audience, might have given a conclusion to his lecture of the greatest importance to the well-being of mankind, by warning all to study their peculiar tendencies, which all have, and which everyone with a little self-examination may discover, and then, by religion and self-control, avoiding temptations that might plunge them into indulgences which make them slaves to their peculiar failings. Such would reflect with pleasure and gratitude for the learned doctor's teachings, and the benefit would descend to generations, and often wear out and eradicate the hereditary tendencies. I wish I had read such a lecture thirty years ago; it would have been of inestimable value to me in the conduct of the affairs of life, and will now to all who will study this all-important subject.

"If there is one question more than another which has occupied the attention of modern philosophers, it is that relating to the *conservation of force*, or as it sometimes is called, *of energy*. It has long been admitted that matter can neither be created nor destroyed, and the whole tendency of modern discovery is now directed to show that *energy* is equally incapable of extinction. So long as it is exerting its action in a definite way, shining and glowing as a candle flame, evolving the *forces* of heat and light, we take note of it by means of our outward senses; but when the flame goes out, are these forces annihilated? Assuredly not. The energy which hitherto was occupied in the production of heat and light has only changed its immaterial form; it still exists in undiminished quantity, though it is now incapable of appreciation by our material senses. For just as the forces evolved by burning fuel are transformed into mechanical motion in the steam-engine, and just as mechanical action is equally capable of being re-transformed into heat, light, electricity, or chemical motion—just as every word we utter, acting on the material atmosphere around us, resolves itself into aerial waves of sound, which for ever afterwards vibrate with diminishing intensity, but expanding area, from one extremity of the atmosphere to the other, retaining always the same amount of energy as it did when the mechanical motion of the breath and lips first gave it birth—so do the forces once born to activity when the candle is lighted live to the end of time undiminished in intensity, although changed in character. When the flame is naturally extinguished these living forces do not die, but become absorbed into that vast reservoir of energy which is the source of all light and life upon this globe."



RIBER CASTLE, NORTH FRONT.

DRIFTING.

THE editor of the *Times*, some time ago, in an article on education, said people should be taught to think; but he should have carried out his idea further—to the next necessary step for thinking to be of any use. People think, and think, and think most think so and so, and nothing effective comes of their thinking. Young people should be trained to think and draw conclusions with care and consideration, and then act on those conclusions, endeavouring to exclude bias or preconceived prejudice. The neglect of this course of mental training is the great cause of suffering, death, or a life of difficulties and misery in physical, professional, or commercial affairs. We witness this in the great number of cases that come to us every week, mostly from allowing themselves to drift into trouble with their eyes open, when the exercise of their will, after careful consideration, would have saved them. They have tried one doctor, then another, and another, who have all differed as to their state and in the medicine prescribed, yet they will not see the inconsistency. They have, in many cases, witnessed the cure of their relatives or friends by other means, yet they cling with obstinate pertinacity to their course, till in extremity they think, reason, and act—but often too late to save life, or to experience good health again.

All persons think, few will be at the mental trouble carefully to think and draw conclusions, and fewer still act after having been convinced in their minds that such and such a course is the best to act upon. I have seen a vast number of cases of wealthy persons, or of independent means, who will persist in residing in an atmosphere where good health is impossible, clinging to the pursuits which have given them means to live free from care and in healthy situations. They drift on to suffering and death. For such there is neither pity nor help, and it is a wanton waste of time to try to save them; drifting has sunk too deep into their minds to be eradicated.

I have had bitter personal experience in the matter of drifting. My good, industrious father would not make necessary changes, as business altered, but, just as the cotton manufacturers for the last five years have been doing, went on hoping for a favourable change, without any reasonable grounds, until, soon after I left school and came into the business, there was little remaining, and I had a new business to create. Previous thought, drawing conclusions, and acting, would have saved us many years of bitter trouble and severe labour.

Drifting, obstinacy, idleness, pride, and prejudice ruin the finest prospects, and, unfortunately, extend to the ruin of the welfare of children yet unborn, who have in thousands of cases to suffer a lifetime of hardships for the course their parents have taken. When this is the case in rulers of kingdoms, the same natural effects follow as a certain consequence. The first French Revolution, in which torrents of blood were shed, the French kings saw clearly the affairs of the kingdom could not go on long as they were; yet they drifted into the abyss, and Louis lost his head. Then came Napoleon, who repeatedly made proposals to our Government to make peace, and stop the calamity of war. English obstinacy refused, and the consequence was the slaughter of hundreds of thousands of human beings, culminating in the reinstalment of the worthless, obstinate Louis XVIII., succeeded by the bigot Charles X., who would not listen to reason, and was kicked out of the country, to be succeeded by Louis Philippe, whose previous life of hardships had taught him nothing but to try the same course, to be kicked out by a back door with his carpet-bag, and barely escape with his life to England. His sons might now have been in the position of the Royal Family of France, instead of outcasts. Again, Louis Napoleon's selfishness and obstinacy has only the last month given way, to save him from being kicked out too. The blind obstinacy of his Mexican expedition ended in defeat and disgrace. The Emperor of Austria stood out till now he is no emperor at all, but the nominal head of states who make him do their bidding. There is no man or woman living but naturally inherits in a degree listlessness, obstinacy, and prejudice; but when these are guarded against, and the lessons of history weighed and acted upon, they are sure to lead to temporal distinction, prosperity, and happiness. When the young have no such lessons impressed upon them, they go on life's ocean without rudder or compass, and the world is strewed with wrecks.

It is distressing to us to witness our fellow-creatures drifting on to death, knowing, as we do, the utter helplessness of the faculty to save them, and when precious time has been lost in trying the entire baselessness of their remedies, and death faces them, the trusting patient is ready then to try anything to save life; but the mischief caused by the doctors' curiously-formed compounds is often irreparable. If a new drug, of potent, poisonous properties, or a destructive mineral is discovered, the medical faculty immediately pronounce the discovery an important addition to their long list of similar terrible agents for the destruction of life. In the *Athenæum* of August 21, 1869, is a paragraph as follows:—

"*Another example of the way in which practical applications unexpectedly turn up when science is pursued for its own sake, is afforded by a result recently obtained by Dr. Matthieson, in his investigation of the constitution of the opium bases. He found that by the action of hydrochloric acid on morphia, a new base was produced, which, as to composition, differed from the former merely by the removal of one equivalent of water. But the physiological action of the new base was utterly different from that of the original one. While morphia is a powerful narcotic, the use of which is apt to be followed by subsequent depression, the new base was found to be free from narcotic properties, but to be a powerful emetic, the action of which was unattended by injurious after-effects. It seems likely to become a valuable remedial agent.*"

How poisoning the stomach and causing violent retchings can be unattended with injurious effects will only gull simple people. Will it promote the health

and comfort of the body? It is not easy for laymen to understand such logic, but this is one of the doctors' mysteries, which people are expected to believe, as well as to swallow compounds they have not the slightest knowledge of as to their properties and effects, that they generally find out when too late to prevent death or distress of the poor frame. Iodine, calomel, &c., it will be seen from the doctors' own statement (see *Index, Drug Medication, Fatal Absurdity of*) never gets out of the system. We can get any drugs out except strychnine, which is so often and recklessly administered, to the permanent discomfort and injury of the frame for the rest of life, without a possibility of doing good. I have had distressing cases in which strychnine has brought on incurable spasmodic twitchings or paralysis of the legs.

I have this morning received a letter, the following is an extract; still strychnine is unscrupulously administered:—

"*Mr. Smedley,—Can you do anything for me? I have had paralysis. Doctor has given me strychnine, which makes my legs stiff, and come up of themselves. I cannot pull them up myself.*" (The certain effect of strychnine.)

What surprises us in our extensive experience of cases which come to our establishment after having tried "*the best medical advice*"—allopathic, homœopathic, or cold water—not only without benefit, but with further aggravation of their diseases, is that similar cases are treated by practitioners just in the same way, although they have never witnessed any cure by the use of their remedies.

For instance, if a person has a sprained knee or ankle joint, or other joint, iodine, blisters, heating lotions are applied, the vitality of the joint being inevitably lowered by their application. Stronger measures are then resorted to, blisters, setons, or scarifying completes the mischief, and amputation is next proposed, and often the poor sufferer submits, being told there is no other remedy to save life.

If the patient survives the mutilation, he is never free from pain more or less the remainder of life, for when his circulation is most vigorous, the arteries, veins, and nerves having been severed, and the circulation of course impeded, pressure is caused on the nerves of sensation; so that the better the general health, the more the pain.

Two cases, one a captain in the army and another a minister, now in my establishment, both strong, hearty men, about thirty to forty years of age, had simple sprain of the knee joint; the usual "remedies" were applied with a certainty of leading to amputation, which was proposed in both cases by two of the most eminent surgeons of England. In both cases I can assure them of perfect soundness, from so many similar cases having been restored without one failure, when they would give the necessary time.

This very morning, the first patient I had in my room was one with a diseased ankle; it was merely bruised at first, but under the orthodox blisters and iodine, it had progressed in disease till amputation was proposed as a remedy. I can assure this case complete recovery.

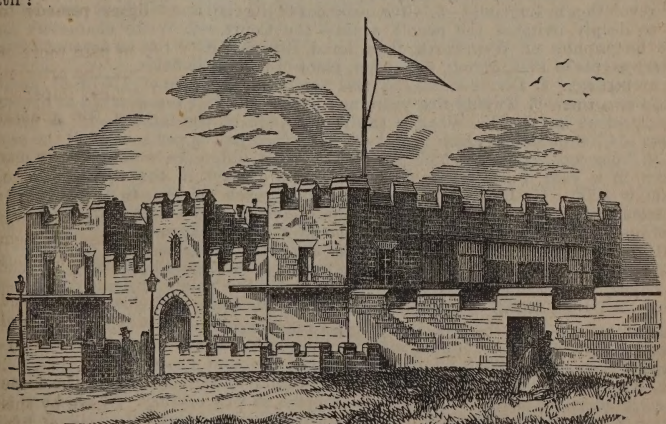
This is the legitimate practice, always and inevitably leading to the same result; yet it is pursued, in defiance of reason and experience. I have by this day's post a letter from the relative of a man in an important position of life, saying his relative is in an alarming state, but has the most decided objection to Hydropathy, although he had witnessed his own restoration to health at this establishment, when in a hopeless state under the doctors. And so, with unreasoning, blind faith, people go to their graves, victims to an antiquated, false superstition.

I should not have been alive to write this had I not thought it best to think and act on the subject of my life. We have been several times almost at the brink of the grave, from overwork and coming in contact with disease; but by our knowledge of simple remedies most congenial to failing nature, we recovered health, knowing to a certainty our treatment would restore. Such a case as my

knee (see *Index*) would have been treated by the doctors in the only way they know, or care to know—iodine, blisters, lotions, amputation; while with the treatment I used I am quite sound. Two years afterwards my horse fell, and rolled over my ankle and side, severely crushing it. I lay insensible on the ground for some time. As soon as I could be got home I had a hot soaping shallow bath, fomentation, and poultice, and was quite well in less than three weeks, attending to my ordinary duties all the time.

A patient now in the establishment, going through a process to save his leg, was in my room on Monday morning last, when a former patient called to see me. He related how he came blind from inflammation, caused by the doctors' senseless treatment, and said how I assured him of restoration to health and sight, and such was the result. Mr. Shackleton, of Leeds, came also last week to see me, in perfect health and strength. Three years ago he had been frequently operated upon for tumour inside the thigh. The doctors cut it repeatedly, under the erroneous idea of letting out the matter, but by cutting into and destroying the vitality of the cellular tissue, prevented the continued effort of Nature to repair the mischief they were doing. At length, after nearly two years' trial of several "eminent" doctors, he was left to nature; but they had undermined Nature's power of endurance to such a degree, that he was sinking. In that state he was brought to me. I could assure him of perfect restoration to health, and such was the case within three months. Thus life, and the welfare of a wife and young family, have been saved.

Would that mankind used their reason, and noticed whether the doctors' practice led to the restoration of health, instead of leading to suffering, crippling, and death!



RIBER ENTRANCE LODGE.

STAYING POWER.

WITHOUT power of endurance, and an unconquerable determination not to succumb under any circumstances while life lasts, but to stand to the wheel and guide the rudder amidst darkness, stormy seas washing over the ship, and not knowing for a moment but that the ship may meet with the probable fate of the steamer *Boston*—strike an iceberg in the dark at full speed, and go to the bottom—without this power mankind cannot do great things. It is true this

power cannot be possessed by all. Many inherit feeble or diseased constitutions, and in these cases it is impossible for such to possess great powers of endurance. But for want of sound, intelligent education, many who have this power in great or less degree have not their powers of mind developed. The mind is stupefied and stultified by poring over dead languages, and the filthy histories of the mythical gods and goddesses—plays such as "Terence," for instance, which a Holywell Street bookseller dare not illustrate and sell in the English language. He would soon be summoned to the police-court, imprisoned, and fined. Yet these plays are performed mostly yearly by the Westminster School youths in Latin, in the presence of the Court, bishops, and ladies. Then the newly-published lists of questions required for Cambridge local examinations contain a mass of matter never likely to be of the slightest use to the students in the battle of life. For instance, the following questions are printed in the last examination papers; mark, for "*Boys and Girls*":—

University of Cambridge Local Examinations for Boys and Girls, 1867. (Deighton & Co., 2s.)

SHAKESPEARE'S "JULIUS CÆSAR."—1. To write about Cæsar, was it necessary for Shakespeare to know Latin? Is there any reason to think that he did?—2. Can you show that Shakespeare must have thought a good deal about Cæsar, apart from this play?—3. Is Cæsar the real hero of the play? If not, who is?—4. What is meant by "the dramatic unities?" Are they observed in this drama?

GUIZOT'S "HISTORY OF THE ENGLISH REVOLUTION."—1. Write a character of Charles I., describing particularly the influences under which his character had been formed.—2. On what *principles*, moral as well as constitutional, was the "Petition of Rights" based?—3. How had the events of the past century in English history paved the way for a revolution in England?—5. Give instances of the civil and religious persecutions that so deeply irritated the people against the Court.—6. Write characters and short biographies of Wentworth, Pym, Laud, Rupert.—8. Write an account of the *military* events of 1645, giving, if you can, plans of the battle-fields.

ARITHMETIC.—4. Divide ·282892 by ·394; and find the value of ·175 of £1, and of 1·00375 of a ton.—6. Twenty-five years ago a man was four times as old as his son, whose present age is 33. What is the present age of the father?—12. A person invests £4,700 in shares which are at 98, and which pay 3½ per cent., and the same sum in 3 per cent. Consols, which are at 94. What difference would it have made to him in a year if he had invested the whole amount in the shares?—13. *A*'s capital is £200. He buys goods on credit from seven persons, to the amount of £40 from each. He sells on credit the goods he purchased to ten persons of £330. Six of his ten debtors pay him £120; and he pays £25 for expenses.

HISTORY OF ENGLAND.—1. State briefly the origin, progress, and conclusion of the Wars of the Roses.—2. Between whom were the Battles of Shrewsbury, Edgehill, the Boyne, and Blenheim fought? How far were the points at issue decided by them?—8. Give a sketch of the military career of the Duke of Wellington.

GEOGRAPHY.—1. In the accompanying map of France mark (i) the course of the Loire, Garonne, Seine, and Rhône, with one town on the banks of each; (ii) the Jura, Vosges, Cevennes, and Alpine ranges; (iii) the position of Brest, Caen, Dijon, Lille, Metz, Marseilles, Strasbourg; (iv) the territory recently added to France.—5. Mention the chief additions made to our Colonial Empire in this century.—6. Describe the position of Alexandria, Algiers, Buenos Ayres, Geneva, Hamburg, Hong Kong, Hanover, Quebec, Limerick, Lucknow, and Trieste. Under what government are they?—9. Whence do we obtain silver, salt, rice, dates, wool, timber, guano? What are our chief exports?

INTRODUCTORY LESSONS ON CHRISTIAN EVIDENCES.—How is faith distinguished from credulity?—2. Show that the first Christian converts must have had strong reasons for changing their religion.—3. Explain: "All these ancient books (the Scriptures) are in the condition of witnesses placed in a witness-box in a court of justice."

The boys and girls by this training have their brains stupefied, or the seeds of consumption and disease laid. Not one question in these books as to the necessity of gaining a knowledge of the structure and functions of their frame.

These examination-books contain about ninety pages of the most absurd and utterly useless stuff for boys and girls to attempt to learn.

This is a lamentable state of education. We see the effects of it in higher circles. The popular writer Kingsley says there is nothing noble but the deeds of war. That is going back to the brutal-force times of the Greeks and Romans. No patient endurance in that doctrine; no self-control under provocation, injury, and insult. Our noted philosopher Mill is all abroad for women's rights and women's suffrage, and three-cornered representations of minorities. Forster, who turned Churchman from having been formerly a Quaker, is now proposing to force the Church Catechism, &c., on Dissenters, and making Dissenters pay for teaching a creed they denounce, and which he formerly condemned. Surely there must be a screw loose in such brains, or they would see it is a folly to attempt the impossible. Disraeli tried it, and failed in his schemes. But, as the late Sir Robert Peel said in the House, it was so difficult for even statesmen to profit by experience of their own and others' failures.

We are far from having got out of mediæval ideas, although we boast so much of the enlightenment of the present times. No greater proof of this can be instanced than to see men of station and learning, with minds acute and comprehensive, fall by the hands of the so-called medical science of the day—giving up their reason and their bodies to men whom they suppose ought to know the springs of life—the cause and cure of disease; but never requiring from them a reason for what they are being done with, or the nature of the stuff they are required to swallow "in faith." It is humiliating to think of it, but often destructive to the credulous patient. I see much of this every day. A few days ago a patient came to my establishment with his wife. He was, when young, a factory hand, but by superior intelligence and industry, got on to be an overlooker, then a partner, then a mill-owner; but, for want of a little common-sense education, he contracted a habit of smoking tobacco, taking his ease, and living well—that is, eating food he had not been accustomed to; and when out of order in consequence, his doctors, instead of showing him that he was transgressing Nature's law, gave him some tonic to get over the deadening effects of the narcotic. This went on for years, until Nature could stand it no longer. Frequent vomiting after meals came on. The doctor thought he had a remedy for that, and knowing his patient's taste for tobacco, did not forbid it, but dosed him with arsenic and bismuth, of course without the credulous patient knowing what the effect would be. He had faith in his M.D., and felt great comfort to think he could pay for such superior advice. The illusion, however, was not of long continuance. The medicine was destroying the organic nerves of the stomach, as the M.D. should have known or did know. The result was cancer and frequent black vomit. Then the patient came to me, but I saw the doctors' "remedies" had destroyed him. I refused the case, and he cannot live long.

Now here is a specimen of hundreds who come under my notice—men with staying powers of mind and body, with great energy and decision of character, patiently and determinedly mounting the ladder they felt sure would lead them to good fortune, fame, and ease—brought to misery and death by blindly giving up the exercise of their reason and common sense which had enabled them to get so far on the journey of life with success. They little think of the pitfall by which a short end may be put to all their schemes, and to life itself.

Cobden, the great and good patriot, was a precisely similar instance of blind faith in M.D.s, without his attempting to use a grain of the abundant ability and common sense he possessed. He merely got a cold, which relaxed the mucous membrane of the windpipe and air-passages in the lungs. A hot fomentation with poultice, and afterwards a spongio, as 68 Bath list 178, 186, 196 (*see Bronchitis*), would have, without the least doubt, cured him in a week. The doctors came in, as in the previous case, and at once proceeding to stop the

symptoms, the expectoration and irritation in the chest, gave opiates and "nourishing" diet. Nature was making an effort to throw off the morbid mucous, but his M.D. put a stop to that, and soon put a stop to life also.

In this case there was a high degree of staying powers of mind and body—great energy of character. One who had stood manfully and without flinching the storm of political malice, a man who could stay on the deck and sink with the ship, doing his duty to the last, destroyed by ignorant treatment, swallowing stuff he never asked the composition of, or in what way it was intended to effect a cure. Several other eminent men are undergoing the same process now, to their inevitable destruction. *"If the blind lead the blind, both shall fall into the ditch;"* and this is the case; only the credulous patient is suffocated, and the doctor gets out to try the process again, with plenty of fresh gulls to act upon.

Some of our philosophers say man has derived his origin from the ape tribe. I don't believe it. Catch an ape, try blisters, setons, and physic upon it; try to repeat the process; the sensible animal would fight hard against a second dose, but noble man patiently tries it again and again, till life is extinct; therefore I don't think we are exactly of the ape tribe. An ape would not stand the following experiment; guileless man will do so again and again, to the doctors' great satisfaction.

THINGS NOT GENERALLY KNOWN.—The *Pharmaceutical Journal* publishes a remarkable instance of unforeseen danger arising from the facility with which oxide of silver is reduced by contact with vegetable extracts in common use. A medical man prescribes twenty-four pills, each containing two grains of the oxide of silver, a twenty-fourth of a grain of muriate of morphia, and a sufficiency of extract of gentian, the pills being coated with silver in the usual manner. The pills were delivered to the patient in an ordinary pill-box, but the lady, being in the nursery, and having no pocket in her dress, placed the box in her bosom, probably next the skin. In three-quarters of an hour a severe explosion occurred, her under-clothes were reduced to tinder, and her right breast was seriously burnt. The patient fortunately had presence of mind enough to seize the part with both hands, and thus extinguish the flame. We learn from Mr. Hills that a similar occurrence has been known in compounding the extract of colocynth with the oxide of silver, and that with creosote or oil of cloves this salt is reduced to the metallic state, with the production of heat amounting often to an explosion. In fact, many of the essential oils reduce the oxide of silver, and one of the processes for silvering glass is founded on the fact, oil of cloves being usually employed in the operation. We may mention that when glycerine and permanganate of potash come in contact, heat is evolved, sometimes resulting in flame. An instance has occurred in which a wound was covered with the glycerine of starch, and then sprinkled with powdered permanganate of potash, when the heat produced became unbearable.—*The Lancet.*

The importance of the skin being kept in a healthy condition is very little regarded, either by the laity or even the medical profession, beyond giving James's powders or other sudorifics, to produce perspiration, or ordering Turkish baths or other relaxing or sweating processes. The idea is to sweat out impurities or disease, totally regardless of the elaborate structure of the skin.

And in addition to the organs and structure there shown, there is the capillary—that is, hair-like—circulation of arterial blood necessary to nourish and keep up the integrity of the skin. Then there is the extensive and wonderfully minute system of nerves of sensation and motion, forming altogether the most delicate and elaborate structure in the human frame, generally considered and treated as a covering of living parchment. The physiologists tell us that two pounds of waste matter passes, or should pass, through the skin of an average-sized person every twenty-four hours, in the form of insensible perspiration; and besides this operation, the skin absorbs, or should absorb, oxygen from the air, when in a healthy state, to assist the lungs in oxygenising the blood.

The warmth and healthy appearance of the skin depend, of course, on a full supply of the warm, nourishing arterial blood, which is in all subjects about 98° of heat. If there is not sufficient power in the heart's action to propel this arterial blood into the skin, coldness, dryness, erysipelas, or disease of the skin is the consequence. If a person is not vigorous, and neglects the skin, then the heart cannot do its duty in sending nourishing blood to the skin. If the skin, in not robust persons, or the aged, is not kept warm, then the heart struggles to do its duty, but is unable to propel the nutritive blood to the surface, and hence palpitation in the efforts to do so. For persons in health to use cold water, or sea or plunge baths, who have not sufficient heart power to restore the circulation, under the idea that they are being braced, is often a fatal error. If persons indulge in the frequent use of hot water, steam baths, or Turkish baths, they inevitably weaken the circulating power of the arterial capillary circulation, and often bring on skin disease, which is simply a want of the nourishing arterial blood. The use of rough towels or brushes is objectionable, as they are likely to injure the cuticle, and the healthy stimulus can as easily and more naturally be got at by the use of ordinary linen or thick cotton sheets.

Vast numbers of human beings have bad health or disease, or die, from ignorance of the nature and office of the skin. There is no excuse for medical men neglecting the subject in the manner they universally do. Who ever heard of a doctor lecturing a patient on the vital importance to health and life attendant on attention to the skin? Plenty of pills, and mixtures, and lotions are prescribed to further lower the power of the heart to propel blood to the surface; and when the struggling organ is trying its utmost to propel blood to the skin, the doctor comes down upon it with his digitalis, and opiates, and purgatives, to stifle its efforts for life, just in the same way, and with the same want of common sense, that a mother quiets her suffering infant with Godfrey's cordial or Stedman's soothing syrup. So utterly ignorant are mankind brought up, without any knowledge of the wonderful complex structure the soul has to inhabit while mortal life lasts! It is distressing to us to see every week, in a great number of cases, how even a slight knowledge of the house they inhabit might have saved from misery, suffering, and death.

With some knowledge of the skin, a person would not submit to treatment their own common sense would show the utter fallacy of, although prescribed by a legalised practitioner. They would not allow their skin to be treated as in hundreds of cases who have come to us in desperation, after many years of treatment by arsenic, and the innumerable compounds they have had applied to the skin. In one case which came under my notice, six pounds of ointment per day, compounded by an eminent firm of druggists in London, and prescribed by a consultation of some of the most eminent M.D.s of London, for months was patiently tried by the suffering, credulous patient. The effect was described to me by the patient (an M.P.) as terrific, and at last unbearable. Where was the common-sense reasoning of the M.D.s in this case, or the patient's either? The doctors should have looked first at the cause, and then applied natural remedies. The cause was very simple. The person, previously in good health, and robust, took a very severe cold by thoughtless exposure when in a heated state, in February. This, as can easily be imagined, stopped the functions of the skin. Our No. 47 Bath list, followed by 163 wrung out of tepid water, with 220 before and behind, and 169¼ dry over all, I would have pledged my establishment, would have restored the circulation and cured by the following morning. I have to-day had a case. The patient fell into a reservoir, and but for ability to swim would have been drowned; the banks being difficult to surmount, he was in the water a considerable time. When he got out he should have been put at once into the No. 47, &c., and next day he would, to a perfect certainty, have been quite well; the congestion of the skin, liver, and other organs would have been, to a certainty, removed. Instead of this he was

treated internally by the doctor, getting more and more incapable of business, giving up all hope of ever being well again. Happening to meet with one of my cured patients, who, after many years of suffering, was exercising himself digging in his garden, in good health, he advised him to come to me. I have no doubt of benefiting him, and, I hope, restoring him to health.

I disclaim having made any discovery whatever in anatomy or physiology. I have been brought up from my youth in manufacturing, and in that, by the use of common sense and industry, accumulated more than a competency. But when a machine would not work well I looked for the cause, and remedied that; I did not at random try—as the credulous patients tell me their doctors have done—anything and everything to cure. All I know of the human frame and its action I have got from the works and drawings of such men as Sir Charles Bell, Grey, Majendie, Budd, Sir C. Brodie, Sir James Clark, Liston, Astley Cooper, Kirk and White's works, &c. &c. I never saw a body or any part of one dissected, and yet I have had scores of surgeons and M.D.'s cured at our establishment by our simple means. The fact is, all that it is necessary to know of the human frame for the cure of disease or the preservation of health has long been known. A celebrated M.D. some time ago published in the *Medical Gazette* that he had made the very important discovery of the terminable points of the nerves in the skin. If he had done so it could be of no conceivable use; but when a more powerful microscope was invented by Ross, it showed the pretended discovery was a fallacy. And so, by a thousand such nonsensical, useless, pretended scientific discoveries, to lead people to believe. If an M.D. or surgeon has gone so deep into the mysteries of the human frame, he can surely easily cure skin disease, or put the stomach, liver, kidneys, and bowels in order. The advertisements of works on physiology and anatomy in the medical periodicals would lead a person not in the secret to believe that there are certain and easy remedies for every disease; but the fact is they never cure, and never do anything but mischief. None of their nostrums can put the digestive organs in better order to make good blood; and without making better blood, relieving congestion, and giving more power to the system to circulate that improved blood, cure or improvement is obviously impossible according to the laws of Nature, which cannot be contravened with beneficial results. Our fundamental doctrine is to do nothing but what is likely to make good blood and circulate it hence our cures where doctors fail; hence so many with us are cured of what has been declared incurable disease of the heart, when, in fact, such cases have only been suffering from congestion of the skin, liver, or some other part, and the heart, making efforts to overcome the obstructions, palpitates, and for want of nutritive blood the skin decays; hence cure of diseased limbs, and the growth of new bone and muscle.

(*Extract from the Daily News.*)

Le Gros Clark on Surgical Diagnosis.—An occasional glimpse into what may be called the inner professional life of any one of the learned professions is a thing which is generally interesting, and ought always to be instructive. Sometimes it is comic enough, and recalls the grimaces with which the Roman augurs are said to have saluted one another when engaged in practising upon the superstitions of the multitude who believed in them. At other times the most thoroughly non-professional mind, if fairly intelligent and cultivated, can hardly fail to learn something worth knowing, or to find itself confirmed in or disabused of its previous convictions or prejudices. Mr. Le Gros Clark's recent lectures to his brother surgeons furnish just one of these latter occasions. Considering the terrible fact that the body of doctors and surgeons have in their hands, in a certain sense, the issues of the life and death of us all, it is well worth our while to stand by and listen while the chiefs of the profession talk to one another confidentially. When the London surgeons assemble to listen to the hints which may be given them by the lecturer of their own choice, one is naturally curious to hear what he has got to say, if only to note how far it tallies with the prevalent notions of outsiders as to the present resources of

the art of healing. The one grand conclusion which we draw from Mr. Clark's lectures, which are remarkably well put together and expressed with striking clearness, is the immense practical difficulty of surgical, and of course of medical diagnosis altogether. Here we have one of the most experienced men in the profession discoursing to his brethren on the principles to be followed in ascertaining the character of injuries and diseases requiring surgical treatment, and assuming as a recognised fact that the complications of symptoms are in many cases so varied and so serious as to require not only a wide professional knowledge and practice, but a special intelligence in the practitioner for their unravelling. And this is the point which such books as this impress so forcibly upon our attention. Mere professional and technical education is as defective in the art of healing as in every other division of human work and study, and so long as the doctors take for their basis for treatment of disease that disease is something to be driven out of the frame instead of want of vitality, so long will the murderous practice go on. It is impossible to arrive at satisfactory results when the beginning of action is destruction of vitality and of life.

We constantly hear so much in public lectures and in private conversations, of what great advances have been made in medical science, and how the barbarous practice of the barber-surgeons is now completely ignored—this is utterly untrue. Not a day passes but we have patients or letters come to us, similar to the following two letters, which I have received this week. In the first case a simple bronchial attack had been treated on such anti-vital principles that consumption and death is inevitable by a continuance of the same treatment. The next case, a fine young man with simple stomach derangement, has been brought, as he says, into a deplorable state; the skin disease is a simple result of the lowering treatment he has had; the heart is too weak to propel arterial blood to the skin, and as a certain consequence, scurf is the result. This case is in my Free Hospital, and will get hearty I have not the least doubt. The former one I have offered my hospital, and he will recover if the disease has not reached his lungs; it is evident from his standing out so well, that he was a healthy young Scotchman, and with ordinary sensible treatment should not have been laid aside a day from his employment.

Sir,—I write to ask your advice as to my case. I have suffered from bronchitis, more or less acutely, since last September; but the premonitory symptoms, consisting of colds and tightness of the chest, set in some eighteen months ago. I put myself under the care of two country doctors; then I came to London, and have been three weeks an inmate of this hospital for diseases of the chest (Victoria Park), but have not yet derived any benefit. My age is 34, unmarried. I lived at home in Teviotdale until some five years ago, when I came to England, and have held various situations on the provincial press. Although always subject to colds, I enjoyed pretty good health for a number of years prior to the winter before last. At that date I began to have a succession of colds, these continued during the succeeding summer, almost without cessation; and in September last I had a severe attack of bronchitis, which incapacitated me from labour for seven weeks. After that I returned to my duties and kept on until March, but I was frequently during that period confined to the house at the end of the week, and at no time did I feel fit for work. The disease, in spite of drugs, kept its hold unabated; I had not vitality enough to throw it off, and I had little or no energy. I came up to London in March, made application, and, at the end of three weeks, was admitted into this hospital. As yet, however, I am not better—worse, if anything. The weather may have something to do with it; but this place is full of draughts. Often the air from over two dozen open windows is pouring into the corridors and day-room, and the whole place is swept with currents of air from end to end. Ventilation is necessary; but I have caught fresh cold more than once from these draughts, and so have many of the other patients. I am worst during the night. I have a teasing cough, which brings with it shortness of breath. I feel the upper part of the chest more or less oppressed, and often at night there is a husky, hacking, wheezing sound connected with the process of breathing. I have, however, very little expectoration.

Having heard of the efficacy of your "mode of treatment," I trust you will pardon my freedom in applying to you for relief in this emergency. The faculty have brought me to a deplorable condition, bordering on insanity, and they have now left me to my fate. My intellectual powers are considerably impaired, incapacitating me from attending to my duties. But I will commence by making you acquainted with the cruel treatment that I have been subjected to, thereby enabling you to form an accurate judgment of my state. About seven years ago I experienced pain in the stomach after exertion. Having enjoyed excellent health to that time, these symptoms naturally distressed me, and I accordingly consulted a physician. He ordered me to bed, and applied ten leeches to the pit of the stomach, and after their removal he permitted me to bleed for eight hours, almost depriving me of life. In the course of a few days I was able to rise, but locomotion was an impossibility. After having partially regained my strength, I was sent to my native place for change of air. Instead of it renovating me I grew gradually worse, and a skin disease made its appearance. Since then (six years ago) I have been the victim of experimental practitioners, and I am now, alas! reaping the bitter fruits of my indiscretion. I have been blistered five times—twice on the abdomen and on the back of the neck, and once on the breast—besides swallowing quantities of destructive drugs. I pursued my avocation till my intellect suffered, which took place about two years ago, and since then I have been a burden to my parents and myself. After the disease had attacked my head, a seton was fixed at the top of the spine, which increased my misery and despondency. I am at present in a most miserable plight, and death in any shape whatever would be a welcome guest. My symptoms are—depression, noises in the head and ears, confusion of ideas, irritability, imperfect sight, darkened perception, and total incapability. I am ever conscious, but existence is really insupportable. Unless my sufferings are mitigated by some means or other I must inevitably perish. I am 25 years of age, naturally strong constitution and good frame.

A relative of mine just writes to me saying his horse has fallen with him and crushed his ankle. He put on cold wet bandages; the doctor came in and said that was quite right, but that he should take some aperient. Is this progress in medical science? What could the aperient do but lower Nature's power to cure? My relative, being a lawyer, said to the doctor he did not quite see any reason to whack his stomach and bowels to cure the ankle, and did not do it; but he should have fomented and steamed the foot and then put on poultices—both cold bandages and purgatives would lower Nature's power to cure. When a part is injured, it wants warmth and life and red blood to renew. The doctors are alarmed at this redness, having in their heads the myth that inflammation is virus, instead of being red arterial blood, and without which Nature cannot build up again. They drive this redness way, then matter and abscesses form, often with fatal results.

The following letter came in this morning, showing the utter helplessness of the doctor practice.

My symptoms are the following:—About six months ago a carpenter's chisel fell accidentally into the inside of the right foot, between the heel and ankle joint. I was taken to the nearest surgeon; he put a stitch into it and strapped it up. He said the cut was in a delicate place, and as there were none of the main leaders severed it would be all right in a few days. The pain continued excessive up the back of the leg; and not being able to put the foot to the ground, I called upon the surgeon that dressed it. He said that there were some nerves cut, and prescribed turpentine cloths to relieve the pain; but without effect. Secondly, he put two leeches on the back of my leg; these also failed to give relief. However, after a few weeks' confinement to the house, I was able, with the help of a stick, to go to the building-yard and attend to my ordinary duties; but still feel very stiff, especially about the knee joint. Shortly after returning to my usual employment, I was attacked locally—shifting from place to place—with what the surgeon called nettle-rash, coming out in blisters, and, uncommon with itch, still continuing less or more ever since. Along with nettle-rash, I have felt for a length of time through the whole system, prink, prinkling, like rain falling on the skin. I applied to a highly-

spoken-of surgeon. He says that the blood has got out of order; but up to this time anything he has given me has failed to give relief. Not having faith in the drug system, I am not inclined to take all that is prescribed, as I feel I am getting weaker, more especially in the lower extremities, but still attending to my usual employment. In conclusion, if you will advise me what you think I should do under the circumstances, as I feel extremely anxious in my present state. I may add that the foot is inclined to swell.

When will mankind use their reason on the all-important subject of their health and life? Such an establishment as ours ought not to exist, and would not if the grand professions of the legally authorised conservators of the health and lives of the population were true. I have sunk above £50,000 in our work, and it has never paid one shilling of profit. I am in my 67th year, with only a wife, and no family to provide for, and an ample income, the produce of a hard life of industry from my youth. I and my wife have to give up all social enjoyment, never get a single day away from our work for years together. In winter we breakfast by gaslight, and turn out over Tansley Moor in snow and frost, to be at the establishment by eight, well or ill; so that it cannot be said we have any pecuniary or selfish motives in our work. We have, at this time, about 200 patients, and about 25 at our Free Hospitals; we could not leave our suffering fellow-creatures for our own ease, when we know, and they know too, there is no help for them by any other means. When the doctors act upon the only sound way to cure—that is, use natural remedies—they will succeed in curing. The doctors are now trying to stop all practice they are pleased to term quackery by Act of Parliament. They have found former Acts useless, and the amended Act they are trying to get will fail also.

IMPORTANT FACTS TO BE CONSIDERED FOR SOUND MEDICAL PRACTICE.—There is nothing red in the body but arterial blood. Arterial blood is 98° heat; nor can it be made hotter. If there is unnatural heat in any part, it is certainly caused by impeded circulation. The heart never ceases pumping arterial blood through the body while life lasts. If the venous veins (see Cuts, p. 450), or large glands, the liver, &c., are clogged or injured, the circulation is of course impeded the heart not ceasing for an instant pumping arterial blood; the consequence is, the obstructed part is gorged with this naturally hot blood, and, pressing upon the nerves of sensation, causes pain: hence the heat and pain of what is miscalled inflammation. The profession, under the fallacious idea of virus in the blood, ruins or destroys the patient by using means which further weakens the circulation. We act on an exactly contrary principle—relieving the congested part by fomentation, poultices, steaming, and keeping up this natural stimulating treatment till the obstructions are removed and circulation restored. Cure can never be effected but by improving the quality of the blood and promoting circulation, and this can never be done by any drug, allopathic or homœopathic.

MUSCLES OF THE HEART.—"When the extensive apparatus of flexible pipes and tubes through which the blood must be propelled from the heart to the extremities of the system, chiefly by the force imparted to it by the contractile power of the muscles surrounding the auricles and ventricles, is considered, it will be easily conceived that these muscles must be constructed with extraordinary contractile power."—*Sir C. Bell.*

In rheumatic fever these muscles of the heart are always affected by the action of medicine and blisters weakening the whole organ; and hence the frequency of heart disease after rheumatic fever. It is ordinarily estimated that on an average one circuit of the blood is performed in 150 seconds.

Applying caustic or belladonna to the eyes can only do injury, and often causes blindness. We have had repeated instances where blistering behind the ears and on the temples for weakness of the eyes, has ruined the sight for life, and in some cases caused total blindness. A case just come in has had a tube

probed from the corner of the eye into the nose, and caustic used. He will have a running there and weak eye for life.

The fact is, medical practice is without any rational basis of action, as the faculty themselves declare.

Scarlet fever, for instance, small-pox, or measles, is an effort of nature to remove irritants, and to restore the natural action of the capillaries. All such cases are very easily cured by the means we prescribe in this work. If the patient survives the doctors' treatment, there is always some ailment or weakness left. We never lose a case.

The following prescription shows the usual false principle the medical faculty act upon. Natural means are never thought of, as in our treatment of scarlet fever, but the body is to be treated inside and out with acetic acid and iron.

Dr. Goodday says:—The extraordinary high mortality from scarlet fever impels me to state a remedy by which that malady may be rendered comparatively harmless. The longer and more thoroughly the eruption appears, and the brighter it is, the less the nervous system and internal organs are attacked, and likely to suffer. It follows, then, that the first principle in the treatment of this disease is to get the rash out as early and as much as possible. For this purpose acetic acid, seven times the strength of vinegar, answers well, or six parts of acetic acid with one part of eau de Cologne. It should be applied with the palm of the hand, or otherwise, all over the surface of the body except the face, night and morning for ten or fourteen days. A momentary stinging is far preferable to the intolerable heat and itching so common to the complaint. Besides causing a healthy excitement of the cutaneous vessels, the acetic acid is antiseptic, and its pungent, pleasant odour rouses the nervous energy, and promotes the free circulation of the blood through the lungs and brain. In short, with the free use of acetic acid I find, after long experience, scarlet fever to be greatly divested of its terrors.

As some cases at first appear slight, and then attack the kidneys and produce mischief in various ways, it is my practice to use the acetic acid with every patient the moment I believe the case to be scarlet fever. I do not wait for urgent symptoms to come on. I am never disappointed in its use. For very young children I like a hot bath with a little mustard or acetic acid in it.

I will only add, in reference to internal means, I commonly begin with wine and the mineral acids, and sometimes with iron, and plenty of beef tea, if it can be taken, because the whole vital power is materially lowered from the commencement.

As fresh air is always a valuable commodity, the use of acetic acid allows its free admission into the room.—I am, yours obediently,

HORATIO GOODDAY, M.D.

66, Kensington Park Road, September 8.

How can natural action be produced by such means? With our packs and simple treatment we never lose a case, infants or adults, when they apply to us in any reasonable time after the attack; and the effect of our treatment in scarlet fever is always improved health. We get the virus out without introducing mineral acids, iron, wine, &c. Our tepid pack at once relieves the intolerable heat and itching. What Dr. Goodday states ignores the vital principle of the human body, and treats it as a piece of furniture or a mechanical engine, and drives life out with the remedies.

Typhus fever is owing to impurity in the blood, from want of proper action of the skin, liver, and kidneys. Our treatment, as prescribed in this work, aims at restoring the natural functions of these organs, and is effectual. In the case of the Prince Consort, the legal medical profession had no means of restoring natural action, and the consequence was death; but a simple fomenting pack (47 Bath list), followed by 48, 70¾, 220, would have immediately arrested the disease, and led to cure.

What are termed strengthening plasters is a senseless practice, stopping up the pores, which are the natural excretants, and impeding capillary circulation. Sea bathing, or cold plunge-baths, are very hazardous to any persons not in good health; for if any part of the body is not in vigour for reaction, paralysis, consumption, inflammation of the brain, spasmodic asthma, or the foundation of internal tumours we have many times known to occur, and irremediable. The frequent use of hot or warm baths is very debilitating, and renders a person liable to disease.

GYMNASTICS, dumb-bells, or any violent straining of the body and limbs often cause irreparable injury. This we have often witnessed without being able by any treatment to repair the mischief. Untrained persons engage in rowing matches or hill climbing, and are frequently ruined for life. I have had many such cases, but restoration to former vigour is rare. In one case, a merchant, usually occupied in his office, known to be a clever oarsman when in practice, was induced to join a crew. The severe pressure on the spine caused total blindness after the match was over, and now he can only read large print, and will probably never recover.

Soda-water, lemonade, ginger-beer, all injure the stomach. *No stimulants*, tobacco, or high-seasoned food, pastry, or cheese will suit the stomach.

The want of warm clothing early in autumn, and leaving off clothing before hot weather comes, kills thousands. We have no real summer in the midland and northern counties till Midsummer. We have had many patients who have laid the foundation of fatal disease by not taking precautions. Turkish baths we have tried fully, several years ago, and gave them up. They often lay the foundation of weakness or disease of the brain, or paralysis. They are used in skin diseases under the entirely erroneous idea of clearing the skin by perspiration; when, in fact, they only cause mischief. All skin diseases are owing simply to want of arterial blood in the capillaries in the skin, from weak circulation; and where arterial blood does not circulate, that part must of necessity decay, as arterial blood alone nourishes the body, and whatever weakens the circulation in the cuticle must of necessity cause decay in the form of scurf first; then, when aggravated, the cellular tissues are implicated, and hence sloughing. Skin diseases are most prevalent in hot countries, where the skin becomes relaxed. This fact is overlooked in the treatment of skin disease in this country, and hence an entirely empirical course of treatment is prescribed. When the eruption is red, or as the doctors term inflamed, arsenic internally and externally in lotion is used, and other anti-vital drugs. The redness being, and can only be, from arterial blood impeded in the circulation, by the doctors' anti-vital drugs, is stopped altogether, the skin becomes whiter, and the doctor thinks he has cured the disease; but the fact is, he has only checked the capillary circulation, and as soon as the patient gets over the injurious effect of the drugs, the eruption appears again. Doctors never radically cure skin disease: we always succeed by first giving stomach, liver, and kidney treatment (see Bath list 50, 48, 70¾—163 spongio, with 174 sprinkled, and 168¾ dry over in night—168¾ sprinkled, 174 sprinkled in day—sometimes 220 instead of 174 in night—occasional 59). A swansdown calico dress entire, wrung out of tepid water, if the skin is generally diseased, and a jaconet mackintosh dress over it worn night and day; this brings the arterial circulation into the skin and cures.

Our spirit lamp (59 bath list) will produce all the good effects required from the Turkish bath, without any danger of injury. Thin persons, or weakly, should not have sweating processes. The same unnatural treatment is applied in giving calomel, opiates, bromide of potassium, belladonna, iron, quinine; blistering weak chests under the utterly false assumption of drawing out disease, when, in fact, the only result is, drawing out the lubricating serum when the blisters rise, distressing the nerves, and injuring the capillary arterial circulation, with the most certain consequences of leading to further weakness of the chest or confirmed consumption.

Warm clothing for old persons, or weakly, has one important effect in promoting capillary circulation, and thus assisting the heart's action and equalising the circulation.

I have now several cases of overwrought mental powers; came almost sleepless and in a state of excitement, entirely unfitting them for their duties. Tonics, strychnine, bromide of potassium, have been given in abundance, iron and steel mixtures, quinine, &c., further stringing up the already over-strained nerves, until, when unendurable, opiates have been resorted to stupefy; the consequence is congestion of the liver, bowels, and kidneys; then aperients are prescribed, until, in thousands of cases, the frame succumbs. Sometimes the doctor, in utter despair of seeing any of his remedies succeed, advises travelling abroad and leaving off all medicine; but what a comment is this on the so-called science of medical treatment! It has no sensible base to rest upon, as it is against reason and common sense, to distress and further weaken an ailing body by distressing and lowering the vital powers, or forcing them into unnatural action. This Establishment would not exist if persons could get cured by the legally qualified profession. We have no pecuniary objects in practising; on the contrary, a considerable fortune has been sunk without any profit, and with an amount of constant and severe labour, which prevents us even leaving our duties for a day, the year round. The Establishment is rarely without physicians or surgeons, or their families, as patients; this fact shows the powerlessness of legal practice. It is distressing to us every week to have a number of cases come in, victims to the legalised practice, sometimes ruined beyond redemption; but in thousands of cases, the use of the means we apply to comfort and nourish the frame has led to restoration to health.

No stronger condemnation can be given to the legal practice than what is published by the profession; we could give cases in point by thousands; but the superstitious belief in the magical effect of a physician's prescriptions, with its hieroglyphics written in a language rarely understood by the patient, is just as strong now as that of the poor devotee who believes in the charm of a relic. Mankind love the marvellous, and the bait is willingly taken if only mystified and presented with such unblushing effrontery.

The following is a specimen of highfaluting followed by an article of utterly worthless research for curing disease:—

The Manchester Royal School of Medicine.—The winter session of the school was opened yesterday, when the introductory address was delivered by Mr. S. M. Bradley, F.R.C.S., one of the lecturers of the institution, and professor of physiology at Stonyhurst College. The address was a very lengthy and elaborate "Retrospect of Advance of Modern Medicine," under which title it has been published in a pamphlet form by Mr. Cornish. "The different examining boards (would there were but one!) are all agreed as to the necessity of medical students possessing some preliminary knowledge before they are allowed to register, and for this reason have instituted certain examinations. Now, it appears to me that there are two subjects which stand out prominently from all the rest as absolutely essential, and yet I regret to say that neither of them is made compulsory. These subjects are logic and physics. First, as to logic. Every one of you, I consider, should understand at least so much of logic as thoroughly to comprehend the laws of syllogism and of induction. Not that I suppose for a moment that the one will mechanically teach you to reason, or the other to invent; but what they will do is this—enable you to judge the accuracy of another's reasoning, the truth of another's induction. In this way logic becomes of the greatest service as mental training, checking a man from forming a too hasty judgment, teaching him to weigh and consider. It teaches us that knowledge is just what we ourselves thoroughly comprehend of truth and reason, and will show us, as Locke says, that 'the floating of other men's opinion in our brains makes us not one jot the more knowing, though they happen to be true.'"

THE NERVES OF DEGLUTITION.—The *Medical Press* gives the following abstract of MM. Waller and Prevost's recent researches:—1. The *glosso-pharyngeal* contributes nothing, in the rabbit, to the reflex functions of deglutition. 2. The *tri-geminal* animates the *velum palati*, and is the principal sensitive presiding over deglutition; after the section of one of these nerves it is no longer possible to excite the corresponding half of the palate. 3. The *superior laryngeal* contributes to deglutition by animating the mucous membrane of the epiglottis and the neighbouring parts. 4. The *recurrent* also contributes by sensitive branches which it sends to the upper part of the œsophagus. Electric excitation of it produces rhythmical movements of deglutition and the arrest of the diaphragm in expiration. Electrization of the superior laryngeal has frequently produced cough in the dog and cat, but it has never caused vomiting, which is easily produced by excitation of the central root of the *vagus*.

Notwithstanding all this logic, the profession have never got beyond jalap, calomel, &c., to move the bowels, or calomel to *unload* the liver, or iodines, blisters, and setons to treat a sprain.

A lady patient was brought to my wife, two years ago, in such a state of prostration, that she had to be carried to and from her bedroom to the baths. This is an instance of many hundreds of cases which have been brought to us, in which functional weakness had been treated as disease, until both patient and doctor are wearied out with the remedies. The young lady was ordered by her doctor four glasses of port wine daily, with bitter beer, quinine, and steel mixture; and a blister on top of the spine. The doctor ought to have known the certain effects of such a course: it brought on fever, headache, and sleeplessness, and constipation, necessitating aperients. Therefore what was in the first place simple weakness, was rapidly becoming serious disease. The doctor's prescriptions disappointed him, and, as a last resource, he ordered a seton on the top of the spine; but the patient had witnessed the distressing and injurious effect of a seton on her mother's spine, and she refused to submit to it. Many such instances of mothers of families and young ladies my wife has had, confirmed drunkards from doctors prescribing stimulants.

In this case the doctor advised perseverance in taking the port wine, and said the patient would get accustomed to it; but, fortunately for her, a young lady from the same locality, one of the doctor's incurables, had come to my wife in a most wretched state—all but in a confirmed state of mania—and had returned home thoroughly well. This induced the friends of the lady to send her to my wife. She got quite hearty, and gained a stone in weight, and can now walk six or eight miles without fatigue, the picture of good health and good spirits. I could name thousands of cases whose lives have been saved here and at our free hospital, the last eighteen years. Females come in, for the most, suffering disease and death by the abominable application internally of caustic, the knife, injections, &c. Their more sensitive frame is treated worse by far than any farmer would allow his animals to be treated, leading to lifelong misery or death, without a possibility of any other result. Female patients are under the sole charge of my wife, who has this week prescribed for 115 cases. No examination, no internal applications whatever are ever used, yet given up cases of internal disease are cured.

I believe the majority of the thousands of patients we have had at our establishment have been brought into the state they come in by the doctor's drugs, blisters, setons, and the thousand ways they practise to torture the human frame. Physic, blisters, setons, caustic, can never give strength.

A gentleman of wealth and eminence came to my establishment in despair and despondency last year, after suffering many things of many

physicians for disease of the heart. I could assure him at once he had only functional weakness. He was incredulous. I told him I did not care what he or the doctors thought of his case, if he would stay, we should easily and quickly cure him. He stayed six weeks, left quite well and gained ten pounds in weight, and now is in good health. His friend, a wealthy retired merchant, came at the same time for a change. He went to London on business, cut his thumb paring an apple, and, against my urgent remonstrances, he put himself into the hands of the surgeons, who caustickedand cut the thumb; and when they had taken the life out and mortification threatened, they amputated the end of the thumb, and he very soon died from the effects of the operation. I have just had a letter from the friend of a man of note in the political world, who had given his friend a statement of his case, for my opinion. Here again, a simple cold taken at the elections in January has, by the doctor's management, drifted into disease, and now, after eight months', as he says, often agonising suffering, he has diminished hopes of recovery. Every imaginable nostrum has been inflicted on the body. He says he has paid £100 to one chemist in London, and has a bill with another, he has no idea of the amount. Our fomenting pack, 47 bath list, followed by our body compresses, 163 sponged, 220 before and behind, and 168¾ dry over all, would have cured him in twenty-four hours. Still he says he dare not try anything contrary to the doctor's advice. Can human credulity go further? "Though he slay me, yet will I trust in him," the unthinking patient says.

The doctors are punishing Napoleon. They gave him sulphate of quinine, but "the stomach rejected it." They then gave him arsenate of potash to counteract the mischief the sulphate of quinine had done; and so it is *ad infinitum*. They give some dangerous drug, and then some other as dangerous to counteract, but which only causes further mischief.

A correspondent of the *Times* of Oct. 14, 1865, has a striking article on one of the most important questions of the day. "The present state of medicine supplies material for a short but closely argued essay. I beg to produce it in part:—There is probably no profession which, in its aggregate or corporate capacity, excites so little interest of the public as that which professes to cure or alleviate the ills resulting from the physical constitution of man. The Church is so mixed up with the State, so inextricably intertwined with private property, and so blended with the past history of the country, that it always vindicates a considerable share of attention from any one professing to interest himself in the affairs of the country at large. The law trenches so nearly on the domain of politics, is so mixed up with considerations affecting the life and liberty of every one of us, and forms, in different ways, so considerable a portion of our literature, that there is no fear of its receiving less attention than it merits. But the medical profession, standing perfectly apart from politics and divinity, having no strong hold on the attention of the extra medical classes, being effectually separated from the State, and imperfectly connected with anything else, is left to go on its own way, very little troubled with criticism and interference from without, and having its course of action determined almost from within. Other professions have, more or less, to consider the lay element: the medical profession, taken as a whole, regulates its affairs with very little reference to any opinion but its own, and keeps on its course without being turned aside either to the right or to the left by popular clamour or unprofessional opinion. The result of this has, perhaps, been that medicine is not sufficiently regarded as a practical science, subject to the same laws and conditions, and admitting of the same tests and verifications, as other sciences; but rather as a secret and traditional mystery deposited in the hands of a few, and neither to be touched, handled, or discussed, except by its initiated and privileged professors. The days are, however, coming when

this position of the medical profession will become untenable. Medicine will, we foresee, be summoned, before a long time has elapsed, to give an account at the bar of public opinion of its claims to take rank amongst the sciences. We shall not much longer suffer ourselves, as our ancestors did, to be paid with mere words; to be told of humours and vapours, sympathies, and all the vague metaphorical terms which are little better than ingenious contrivances for the concealment of learned ignorance. On what single general principle is the medical profession really agreed! What point can be considered so clearly established, after the labour, researches, and writings of 2,000 years, that nothing can be urged to the contrary? In lectures and treatises we have an appearance of scientifice accuracy, but when we come to practical tests, we sink down immediately in the purest and most abject empiricism. In these days little is taken upon trust. It is impossible to arrive at any sound conclusion with regard to the efficacy of the healing art as long as we contemplate success or failure in individual instances; but outbreaks of disease on a great scale furnish a severer and truer test; and if medicine is obliged to confess itself unable to deal with the whole type of disease, we are justified in doubting its power to do much to assist Nature in its struggle in individual instances."

Thus writes the *Times*, the great national organ of Great Britain—not only regarded as such throughout the dominions of Her Britannic Majesty, but throughout the civilised world. The *Times* is certainly not adverse to the faculty as a profession; it has, in numerous instances, placed its valuable space gratuitously at the disposition of the members who are for ever advocating their claims to the loaves and fishes. Letters signed in full with the names, titles, and addresses of the writers; letters having a tendency to advertise their correspondent much more than any good their publication could do the public; letters which would most properly have been charged for as advertisements by many newspapers. The *Times*, by inserting these communications, doubtless, wished thereby to prove its goodwill towards the profession. I merely make these observations in order to do away with the impression that *animus* could have prompted the editor of a powerful organ like the *Times* making the quoted remarks. Might not the able writer of the article alluded to reply to the remonstrances of the faculty with the saying of Cicero, "Plato is my friend, Socrates is my friend, but truth is a friend I prize above both!"

The family physician of one of the wealthiest bankers of this country, brought a gentleman to me who he feared had cancer of the stomach; he had tried all his skill, but his patient got worse; in fact, it was as usual the "*remedies*" (?) which prevented the stomach recovering its natural tone. I got the case well. I said to the M.D., should I prescribe for him—by way of a joke. He said, he wished me to do so as he was not well. He showed me his tongue, and said all his efforts were unavailing to get it clear, and he had little sleep. I told him he knew he was in a dangerous state; he said I was right. I prescribed for him to practise at home. He got well, and said, "he should not take physic again," and ever since (five years ago), both himself and his former patient have enjoyed excellent health.

Another case: a London M.D. had lost a member of his family by typhus fever, and had been prostrated by it himself. He came to me with his legs filling with water, and completely broken down. I made light of the case and said, "although he failed to reduce the swelling, and to relieve the congestion of the liver, we should very easily get him right." In three weeks he returned home well, and declared "neither himself nor his family should ever take medicine again."

I could fill a volume of such cases of medical men or their families who have found our practice succeed, when theirs had utterly failed to do anything but mischief. And as to letters I receive daily of doctors' failures, I can count them by hundreds during the year. They often say they have tried doctors

without effect; but unfortunately that is never the case, the drugs—homœopathic or allopathic—the blistering, setons, cutaneous injection of morphia, and the bewildering list of experiments the doctors have tried, have not been in vain, but the effect is not unfrequently irreparable injury.

The "remedies" (?) ruin the organic nerves of the stomach, destroying the circulation in the coats of the stomach. Cancer of the stomach always takes place from such causes, and no other, and can be produced in a healthy stomach by doctors' "remedies" (?) Destroy the vitality of the organic nerves, the arterial blood will no longer nourish the part; decay and sloughing will commence and go on till the subject is destroyed; yet caustics, arsenic, potassium, and a thousand other deadly missiles are brought to bear against the life of the organic nerves, which alone give power to every part of the body, to receive nutriment from the blood; ignoring the action of the organic nerves and of the capillaries by the profession sends a host to their graves. It is a practice against Nature's fundamental laws.

Every year at the opening of the medical schools grand harangues are uttered by medical professors, telling the students they are called to the most noble and responsible calling man has the privilege and honour to be appointed to, that all other professions are of secondary importance; that the lives and happiness of the community are in their hands, denouncing what they term quacks and all "unqualified" practitioners, and warning the students never to lend their countenance to any but the orthodox mode of dealing with disease; they are reminded of the anxious emotion with which the arrival of the doctor at the bedside of the patient is regarded by the husband or the wife, or the sons and daughters, of the invalid, and how they are with gravity and conscientiousness to consider the great responsibility resting upon them; when the upshot of all this pompous, purposeless garbage is, that they must give jalap and calomel to set the bowels going, diuretics to purge and weaken the kidneys, bringing on dropsy; to blister and seton a knee till ready for amputation; to change the medicine every time it does not answer their expectation, when it is laid down dogmatically in their Pharmacopœia that such and such a remedy is a specific, although, over and over again, a thousand times, the professors themselves have found it is not the case. To blister and seton the spine, to the ruin of the spinal cord and brain; give strychnine until incurable nervous twitchings are produced; to cut where it is impossible for Nature to heal again. Would that a Royal Commission of laymen and doctors was appointed to investigate this all-important subject, involving the lives and happiness of the whole community!

We could show some thousands of cases which have been given up as incurable by the profession, but notwithstanding have thoroughly recovered by our natural treatment. *Why do not these professors, with their high professions of unmercenary principle, inquire into cured cases they know in scores we have taken out of their hands, and rescued from death or mutilation?* They have often expressed their astonishment at our success, and often recommended what they considered desperate cases to come to us. When they know lives can be saved, and mutilation prevented, where is their vaunted high principle in not ascertaining what methods have been employed, and follow them, independent of professional routine?

A vast and grave responsibility rests upon the medical professors for resisting the evidence of their own knowledge of relief or cure to be had to save the honour of their dogmatic, illogical, baseless system. The lives and welfare of the community is of very secondary consideration with them to keeping up the infallibility of their code.

One of the many gratifying circumstances of our practice is a visit from our former patients, with their hearts full of gratitude to God for having directed their steps to Matlock Bank, when death and the grave stared them in the face. Several such cases have come to see us to-day (24th Sept.). I requested one to

put his case on paper, and the following is his statement. He got well, and has continued in perfect health :—

Dear Sir,—I very willingly give you some particulars of what I consider a very remarkable cure, in my own case, of an abscess, under your treatment. In the early part of '68 I had a dangerous fall, which caused a serious wound in the side. Directly a large lump arose, which the doctors thought arose from a rupture caused by the fall. In two or three weeks, however, it was clear that an abscess had formed; it came to a head and broke in two places, when my two medical men cut an opening from one aperture to the other. It continued to discharge for several months, and broke again in two other places. Every effort was made by them to effect a cure. I was sent to the sea-side for a month, and ordered to take a good supply of port wine to support the system under the heavy waste arising from the constant discharge from the abscess. On my return from the sea-bathing I found that not only was there no prospect of the abscess healing, but two others were forming, and my friends tell me they had no hopes of my recovery. In this state I determined to try your treatment, and from the remarks made to me by two friends who had been frequently in your establishment, I had strong hopes you would effect a cure. About five months after my fall I placed myself under your care, fully determined to conform to your instructions in everything. In five weeks the abscess, which had three or four discharging apertures, was completely healed up, and the other two had by some means disappeared. I remained with you for ten or twelve days longer, when I returned home to my family completely cured. But not only was I completely relieved from the abscess, but my whole system seemed to be thoroughly renovated, and I felt an elasticity and vigour of constitution, although fifty-eight years of age, I had not experienced for many years before. My health still remains equally good, I am thankful to say ; and you are at full liberty to make what use you think proper of this. With grateful remembrance of the great good I have experienced under your care.

I give below copy of a letter I have received this morning. If a non-professional had practised such ignorant, brutal, cruel treatment on a fellow-creature, he would have been denounced and prosecuted; but once licensed to kill, the profession can cut and poison, and try any vagaries on the public with impunity. The doctors, in this case, would not allow nature to throw off the morbid matter, but cut into the cellular tissue as often as Nature retried to recover her powers. A similar case, Mr. Shackleton, Leeds, I have named before, was similarly cut by Dr. Teale and others, and, just as in this case, then left to die (we got him well). They know they never cure by severing the capillaries, and so preventing nutritive blood from coming to the part to restore, also severing the organic nerves, &c.; yet they make their pompous harangues, as I have before remarked, at the opening of the medical sessions, about the vast scientific progress they have made, and which mankind have to be thankful for.

London, 23rd September, 1869.

To Mr. Smedley.

Dear Sir,—You may possibly recollect receiving from Mr. ——, in the beginning of the year, a statement respecting a tumour in the thigh which has troubled my husband for more than two years. You replied then that you had had such cases under your care, and that all had been successfully treated by you; but there seemed a doubt as to whether you thoroughly understood the particular sort of tumour from which Mr. —— suffers. He has been under the care of Doctors Paget, Hilton, and Hutchinson, and they say that, although it is a well-defined type of tumour, it is a rare one. They say it is a thickening of the fibres—a recurring tumour. I think another name they give it is "fibroid tissue." It was cut out first in January, 1868; again in September; again in

February, '69—these were all large wounds. Since February small growths of the tumour have come incessantly, and have been cut or burnt out. The wounds have always healed with faultless and wonderful rapidity, but Mr. —— says that is only a part of the rapid growth of the tumour. They believe the cause of this tumour to be a blow which Mr. —— had on the spot about three years ago. It is on the outer side of the thigh. For a long while my husband bore these repeated operations well, but for the last few months it has told exceedingly on his health. He has had for two months and more a constant pain in his right side, an incessant hacking cough from irritation of the throat, and a great deal of bloody expectoration also from the throat.

Will you kindly tell me whether any case of this kind of tumour has ever come under your care, and whether a cure was effected by hydropathic treatment? Or if this especial tumour has not actually come under your notice, do you think that hydropathy is likely to be suited to it?

My husband has been repeatedly urged by many friends to put himself under hydropathic treatment, but he seems to have a nervous fear of it, entertaining a great horror of the "crises;" but cure by the knife or the red-hot iron seems hopeless, and his health and strength are giving way. He has consented to my writing to you, and we shall be truly obliged if you will give the case your consideration, and us your candid opinion. If you wish for any further particulars, I will gladly furnish them. Possibly you may retain the statement which Mr. —— gave Mr. —— to enclose to you. I remain, yours respectfully, M. ——

Mr. Smedley. London, 24th Sept.

Dear Sir,—I learn from my husband that I did not give you, in my letter yesterday, the right name of the tumour he is troubled with—it is *recurrent fibroid*. He also thinks that I did not sufficiently explain the appearance of the growth of the tumour.

A little swelling and hardness comes: sometimes it has a dark appearance; these are cists of blood; they soon assume the appearance of proud flesh. The doctors say it is a thickening of the fibres.

My husband has now a large hole, which has been burnt out at three different times within the last three weeks; but the growth seems more deeply seated than the many cists that have been removed within the last six months, and the burning has not removed it. The inflammation from the burning is too great now for anything else to be done. Mr. —— says it must be left for a week or ten days, and then he must cut it out.

This case has now come, and got well.

Another case of a young man, aged twenty-two, came to consult me this morning, 24th September, 1869, and the following is his statement—he is ruined for life. Such butchering requires no remark from me. I could give thousands of similar cases of scarifying, caustic, and cutting *(internally in females)*, strychnine, &c., &c., who have come to us the last eighteen years, and in hundreds of cases ruined beyond redemption.

My illness came on from cold. I went to work for a fortnight, till I could go no longer; then came to Buxton, and there placed myself under Dr. ——. First commenced by blistering the spine and painting with iodine; then burn spine with hot iron in several places; linseed meal poultices applied night and morning for a fortnight; then put seton in across the kidneys for three weeks; then urinal passage affected; and still remains. Medicine given was principally strychnine.

John Lowe, Lea, Matlock, age 69, crushed his little toe. It festered, and became very painful. Sent for Dr. Brown; no relief. Sent for another doctor, and another, who informed him he had incurable gangrene, and that he had been to Mr. Potter, Darley, a similar case, only the gangrene in the leg. Mr. Potter

asked the doctor to amputate his leg, but the doctor said he dared not do it, as it would be fatal, whether leg amputated or not; gangrene was incurable; the man died of the disease. Lowe came to our hospital, and was very soon cured, and has been at his work at Mr. Wass's lead-works ever since. Here life would have been lost for want of simple knowledge of cure by the legal profession. The man was dying in agony previous to coming to the hospital.

Another living condemnation to an M.D. and two surgeons is the case of a basketmaker, whom they tried to make a stiff knee, but could not succeed. He has been for years, and is now, perfectly sound; yet, as in the two leg cases I have now under treatment, the great Drs. Paget and Ferguson could only suggest blisters, setons, &c., which they knew to a certainty would necessitate amputation, and with our treatment are certain to have sound limbs.

A young lady was brought to my wife yesterday from Nottingham. She had rheumatism in her elbow, which was stiff and painful. The doctor put her under chloroform, and then worked the joint, only to find he had made it stiffer and more painful. Call this science!

Mr. Ballington, shoe-warehouse, Matlock Bridge, had a blow on his side. Fomentations and poultice would soon have cured, but the usual plan was taken to let congestion go on till a hole was formed. He went to the infirmary, and was sent home. One of the doctors proposed to cut and caustic, but another, a friend of mine, would not allow it, and said the man better return home and go by my directions. We applied our simple plans, and got up vitality in the stomach by our bandages, &c. His case was thoroughly cured, and he is now in excellent health. If the caustic and knife had been applied, death would have resulted to a certainty.

We are so disheartened at the gullibility of the public going on with a knowledge of the power of our treatment to cure, yet keeping to the doctors until in a desperate state, that we are often inclined to leave them to the legalised doctors.

The following article is a specimen of wordy mystification, to show their skilful attention to the public weal, which the faculty are so frequently imposing upon the public. A new epidemic "synocha," and relapsing or famine disease, threatens the country. When my eye caught this, and thinking, as we have this year a tolerably good harvest, bread moderate in price, I was at a loss, till I read on about "synocha," how a case treated for bronchitis proved to be "a febrile disease."

Famine Fever.—From the hospital experiences of the last few weeks, it seems that the metropolis is threatened with an unaccustomed visitor in the shape of an epidemic of an infectious disease, which, under the name of synocha and relapsing or famine disease, has, since the middle of the last century, been frequently recognised among the poor and destitute classes of Ireland and Scotland. A well-marked case of this febrile disorder was recently observed by Dr. Kelly, in King's College Hospital; and in the medical wards of this institution there are, at the present time, five other cases, concerning the nature of which there can be no doubt. A woman, thirty-seven years of age, was admitted, under the care of Dr. Beale, on the 3rd inst., to be treated for bronchitis, which was afterwards found to be associated with severe febrile disturbance of a relapsing type. After seven days this woman was followed by her husband, and a son, about twelve years of age, and afterwards by two other children from the same house—a very dirty and badly-drained tenement in Great Wild Street. The symptoms presented by these patients were characteristic, and consisted in severe pyrexia, muscular tremor, occasional delirium, and a rapid fall in temperature on the seventh or eighth day, followed by an apparent convalescence for about a week, and then by a recurrence of similar febrile attack. No petechial eruption has been observed; but, in two instances, a crop of herpetic vesicles made its appearance on the face. Other cases of relapsing fever have, we learn, been treated at the fever hospital.—*Lancet.*

Surely the great penetration of a Dr. Beale should have been able to distinguish a case of bronchitis from one of starvation, this crack-jaw "synocha." He found simply a starvation case, and forthwith the public are to be alarmed by the great medical organ that it is highly infectious.

The faculty are thoroughly aware of the gullibility of the public, and know how necessary it is every now and then to frighten them, and to impress upon the public how dependent they are for life and health on their forethought and skill, when they never cure any disease with what the poet Burns terms their "dirt," nor with their setons, blisters, and scarifying.

The fulmination of such crackers, however, answers; and when people are the least out of order, send for the doctor, and with the utmost simplicity surrender their reason and their bodies, and notwithstanding the ruin, mutilation, or death they see caused by their remedies, yet the cry is, "Send for the doctor." And how often, when the body is dead, "it is such a satisfaction the doctor should see the dead body." The public deserve all they get by such a course.

It seems these cases of "synocha" could not be cured at home by drugs, but had to be taken into the hospital, where, without drugs and with nourishing food, the sagacious doctors know they will recover, in spite of "synocha." What do the public know of "synocha" until the editor, to enlighten our supposed ignorance, tells us it is famine disease? Why drag in the awful term "synocha," but to impose their deep learning? We have imposed on us a life of incessant labour by the inability of the faculty to cure curable diseases. It is voluntary on our part, and highly gratifying, but nevertheless it is a life of deprivation of all social intercourse, or of a single week, or even a day's, holiday the year round. When we see our fellow-creatures suffering or sinking from diseases which the faculty have been able only to aggravate, we could have no peace in our own minds in preferring ease and selfish, although innocent, gratification, to serving our fellow-creatures; but the yoke is laid upon us, and will be till the faculty, by scientific, sensible treatment, according to Nature's laws, cure their patients, or our life ends.

Diseases aggravated by drug-treatment are manifestly much more difficult to deal with than those which have merely followed their natural course. The drug has not cured the original disease, and is itself a material repository of noxious properties which must continue to work mischief as long as it remains in the body; and nothing more can be done by medical agency until depuration and renewal of tissue shall have previously been effected. Here Hydropathy in some form or other is the only hope of the invalid—and it is by this class of patients that hitherto the system has been mainly supported. It does not, like its rivals, preach unto the people "smooth things;" and it is not to be expected from human nature that it will first try what is, or appears to be, troublesome and expensive, and requires much self-denial, so long as it can be persuaded to believe in the flattering promises of some mysterious nostrum or some incomprehensible prescription. So long as people are ignorant they will believe in an array of long words and mysterious quackeries; and at present drugs which make a great disturbance in the system are naturally preferred to modes of cure which have only experience and common sense to recommend them, and are not only opposed but despised by the faculty. One thing, however, in some degree reconciles us to the ire of learned medical corporations, and that is this, *that there is nothing which they are now agreed upon that they did not once oppose* (especially the use of quinine, mercury, and vaccination).

"The effect of a drug may be modified many ways by the actual condition of the body at the time of its exhibition, as well as by the dose in which it is given, or the frequency with which it is prescribed. It is even possible for the same drug to produce opposite effects at different times in the same case; and the amount of the dose still more frequently determines the organs or tissues which shall be especially affected. This circumstance alone is enough to condemn a

system which relies wholly upon drugs; and we do not hesitate to assert that the attempt to exclude the use of heat and cold from their right position as remedies is (in the present state of physiology) quite unjustifiable; and those who represent baths and hydropathic appliances as powerless against disease, condemn themselves as ignorant of the first principles of the healing art."—*Dr. Haughton.*

As long as life or ability lasts, we shall go on fighting against the destroying superstitious belief in a practice contrary to reason and common sense, and which destroys annually more lives than a Crimean war. Thank God, we see a host of our fellow-creatures rescued, and this makes labour and self-denial a pleasure, encouraged by the success of such cases as the following:—

"Dear Sir,—I beg to express my great thankfulness for the treatment received at your Establishment. Only a week ago, when I arrived, the right side of my facial muscles were paralysed, my utterance defective, and unable to close my right eye. Thanks to your system, I am now restored, and have much pleasure in making this statement."

David Williamson, coal miner, aged 42, married and family, in March last had a fit of apoplexy, followed by paralysis, face drawn, brain congested, nearly lost use of one side. Leeches and seton top of spine have rendered cure impossible. Doctors know this, yet persist in this senseless treatment. Peter Gregory, carpenter, about 60 years of age, stout, seized at 4 a.m., apoplexy and paralysis, speechless, face drawn; was taken immediately to my Free Hospital, had No. 47 Bath list, with body-bandages, &c., after; by 9 a.m. quite restored, and walked home up Riber Hill two miles, and in a few days was at his work, and ever since, now two years, been in excellent health. I showed the case to the Speaker of the House of Commons.

While correcting this article for the press, I have received the following note, one of the hundreds of specimens how strong persons are ruined by the horrid drug and blister practice; a 46 Bath list would have cured him in 1½ hours at first:—

Mr. Smedley.

Dear Sir,—I take the liberty of addressing a few lines to you, asking if you will be so kind as give me your advice respecting your Hydropathic establishment at Matlock, having been advised by a friend who has been there for his health. First, I may state to you that I have had congestion of the brain for three years and three months, and was under the doctor for eighteen months. I was blistered, leeched, and under many other modes of treatment, and I beg to say to you that I have still a pain in my head, at times severe. I have also what is termed double vision, seeing two objects at once. I have no doubt that you will have had many patients the same way. Mine was brought on by getting wet, and a severe cold following; and if I had not had a strong constitution, I could not have withstood it. My general health is good, but I have a giddiness in the head. I was induced to send for a book which you were the author of, and I think, if I were at Matlock, you might do me good. May I ask you to give me your opinion? and if you think I could get benefit from it, I would come at once. I may state that I am a farmer, fifty-four years of age, and, as I have stated, I am healthy except my head, which, at times, is bad enough. Your answer will greatly oblige.

THE AIR WE BREATHE.

The following sensible letter appears in the *Manchester Guardian*:—

Sir,—As thousands are committing slow suicide through ignorance of the conditions of health, perhaps some of your readers may be enabled to prolong their lives and increase their physical enjoyment by means of a little information on the subject. The food we eat has to be converted into blood, which is

circulated through pipes called veins and arteries, into every part of the body to repair the waste which is constantly going on. Any one who has a good meal knows that in course of time he will want another, and however soundly he has slept he will want to sleep again. This exhaustion and waste are going on throughout the body, and the blood supplies to every part of the body, by means best known to the Great Architect, what is required. But the food we eat contains something more than the exact quality and quantity required by the blood. The waste has to be separated from the vital nourishment and removed from the body. The air we breathe assists in the process of conversion and separation, and contains in itself some of the essentials of life. It is in fact a self-acting washing machine, busy at work every second of the 24 hours removing the waste and refuse from the lungs. In the process of digestion gases are produced which are simply poisonous. If the healthiest man living had to breathe the same air over and over again without fresh air to purify it he would soon be poisoned by his own breath.

"No need for pestiferous drains,
No need for infectious disease;
Men gender the agents of death,
While sleeping in bed at their ease."

Let a person who has slept in a close confined bedroom close the door after him and take a walk in the fresh air, and then go suddenly into the room he has slept in, and he will be astonished at the foul smell of it. This foul air is poisonous, and should be removed at once by letting the fresh air get freely into the room. A captain who knew more about navigation than the laws of health took a number of emigrants from Cork to Liverpool. A violent storm arose, and to enable the sailors to do their duty without interruption, he put the passengers in the hold and closed the hatches. When the storm was over and the hatches removed, half the passengers were killed by their own breath, and the others seriously injured. Such is the result of ignorance about the air we breathe. The old proverb that "a bee sucks honey from the same flower which yields poison to the serpent" has a wide application. The stomach which converts food into living flesh and blood, manufactures poison which has to be got rid of. The air we breathe is the busy scavenger which removes the poison. Every breath we breathe mops up a quantity of poison, which is thrown out of the body by the expiring breath; hence the advantage of a plentiful supply of pure fresh air to clear out the poisoned breath before it has had time to do serious injury. The languid sickly look of those who live in closely confined rooms is a matter of common observation. When men are confined during the day the best plan is to sleep in the open country. As a rule, those who live day and night in crowded towns die 17 years sooner than those who live in the country. Fevers are produced by breathing the same air over and over again, so that pure air to breathe is a life and death question. What a difference a few days at the seaside makes to those who live in close towns!—Yours respectfully,

HENRY FLETCHER, Ventilating Engineer, Manchester."

Sitting-rooms, and bedrooms especially, are commonly air-tight—no ventilation near ceilings, where all the bad air accumulates and fills the room. J. S.

THE BREATH OF LIFE.

BY W. CROOKES, F.C.S.

(From the "Popular Science Review;" Robert Hardwicke, 192, Piccadilly; 2s. 6d. This Review contains much important information on various subjects, and the April, 1863, number gives Cut and Structure of Skin, very good.

Not only figuratively, but in actual reality, can the life of man be compared to a fire, or lighted candle. Respiration may be regarded as the same process as combustion, only performed in a slower manner. Fuel is placed in a furnace, and the combustion which we see take place with the evolution of heat and light is owing to the combination of the oxygen—that wonderful constituent of the atmosphere—with the carbon and hydrogen of the fuel. In a similar way we place food (which is fuel) in our bodies, and then, by the act of respiration, we draw into the lungs oxygen, and this, uniting with the carbon and hydrogen of the food, also produces a disengagement of heat.

Another point worthy of attention is, that the combustible matter of the food —the carbon and hydrogen—when burned in the body, by means of air drawn in by the lungs, produces exactly the same amount of heat as it would have done had the same quantity been consumed in an ordinary furnace by means of the free atmospheric oxygen; the only difference being that, in the latter case, the combustion takes place rapidly, evolving an intense heat for a short time; whilst in our bodies the fuel is burned more slowly, thus evolving less heat for a longer time—the total amount of heat liberated by the combustion of a given weight of carbon, whether it be burned in the form of coal or beef, being always the same.

This, therefore, is the cause of the high temperature of the human body. We each carry about within us a portable furnace of the most perfect construction. Fuel is thrown on at intervals during the day, the need of a fresh supply being made known by the feeling of hunger (as it is in some steam-engines by the ringing of a bell); whilst a draught of air is drawn in at each inspiration, by which means the process of combustion proceeds uninterruptedly.

The analogy is strictly correct, even if pursued further. In a furnace we can augment the energy of combustion by increasing the draught of air; and so in our bodies, if we increase the normal number of respirations per minute, a considerable rise of temperature is the result, the excess of heat being radiated into the surrounding atmosphere, and carried off in the form of perspiration. This explains why persons in Arctic regions consume such enormous quantities of food in comparison with those in more temperate latitudes. In order to keep up the natural heat of the body (which is invariably the same—99° 5′ Fahr.) in the midst of the intense cold of the surrounding media, it is necessary for considerable quantities of fuel to be rapidly burned in the body, so as to restore the amount of heat lost by radiation; and not only is the total weight of food which is required in the Arctic regions vastly greater than that consumed in warm climates, but the former contains a greater per-centage of combustible matter; the fruits which constitute so large a proportion of the food of the inhabitant of the South containing not more than about twelve per cent. of carbon, whilst the blubber or fat which forms the staple diet of the Esquimaux or Lap contains nearly eighty per cent. of that combustible. Plenty of food, therefore, takes the place of clothing, in the same manner as a arm raiment is a partial substitute for food. The warmer we are clad, the less fuel it is necessary to burn, in order to keep up the supply of animal heat lost by radiation; whereas, if we were to walk about naked, or were exposed to an Arctic temperature, we should be enabled to consume twenty or thirty pounds of whale's fat, together with several quarts of train oil and brandy, without difficulty, finishing off with a few tallow candles by way of dessert; the combustible matters here indicated being not more than

sufficient to supply the enormous radiation of heat consequent upon a difference of perhaps 120 degrees between the temperature of the body and that of the external air.

The analogy between the life of man and the flame of a candle, or stove, is thus seen to be something more than a mere fanciful theory. Warmth and vitality are produced equally in each case by the combination of combustible matter with the oxygen present in the atmosphere; and in either case, if the supply of air be insufficient or vitiated, a similar result will follow; for the pale, sickly, flickering flame of a candle burning in an atmosphere deficient in the necessary supporter of combustion, or containing noxious gases, is strictly parallel to the delicate, sickly, etiolated appearance caused in human beings by an impure atmosphere, whilst the ultimate result is the same in both cases, namely, the extinction of vitality, or death.

An attentive examination into the phenomena of combustion, as exemplified in the burning of a candle, shows us, therefore, that not only is it necessary to take account of the food which we eat—that is to say, of the fuel with the combustion of which we keep up the requisite temperature—but that a careful attention to the quality of the air we breathe is no less important to our health and comfort. A candle burning in a close room not only consumes a certain quantity of the vivifying principle of the atmosphere, diminishing the amount of oxygen present and available for other purposes, but it likewise communicates to the air an equal volume of another gas—carbonic acid—a substance possessing the most deadly properties—the pure gas suffocating animals placed in it as if they had been plunged into so much water. Even when it is present in the air in only small quantities, it produces very deleterious effects, 4 per cent. acting like a narcotic poison in the atmosphere, and even a less proportion producing depressing effects of a most injurious description. If, then, a candle, which consumes so small a quantity of oxygen, causes such a change in the atmosphere, how much more will the respiration of human beings tend to vitiate it. It has been calculated that a man every twenty-four hours consumes nearly 400 cubic feet of air, with evolution of the deleterious carbonic acid gas; and that were he to be inclosed for twenty-four hours in a room eight feet square by nine feet high, he would be moribund at the end of the time. And these are not merely fanciful or supposititious cases. The action of contaminated confined air upon the health of the inhaler is one of the most potent and insidious causes of disease. Any addition to the natural atmosphere that we breathe must be a deterioration, and absolutely noxious in a greater or less degree. Our health, says Thakrah, would immediately suffer did not some vital conservative principle accommodate our functions to circumstance and situation. But this seems to get weaker from exertion. The more we draw on it, the less balance it leaves in our favour. The *vis vitæ*, which, in a more natural state, would carry the body to seventy or eighty years, is prematurely exhausted, and, like the gnomon shadow, whose motion no eye can perceive, but whose arrival at a certain point at a definite time is inevitable, the latent malaria, which, year after year, seems to inflict no perceptible injury, is yet hurrying the bulk of mankind, with undeviating, silent, accelerating rapidity, to a premature grave. Pure air is the food designed by nature for the constitution. Man subsists upon it more than upon his meat and drink; and there are numberless instances of persons living for months and years on a very scanty supply of aliment; but no one can subsist even for a few minutes without a copious supply of the aërial element.

Deaths from the respiration of many persons in a confined space are, unhappily, not rare; and without going back to the shocking instance of the Black Hole at Calcutta, we may refer to an equally lamentable occurrence which happened a few years ago in an emigrant ship, in which, during a storm off the English coast, the emigrants were confined below. In less than six hours more than sixty persons perished!

The paramount necessity which exists, according to these instances, for fresh air, equally holds good in less extreme cases. Just as surely as a total deprivation of oxygen, or the presence with it of any excess of deleterious gases, produces death, so the breathing of a partially-inhaled atmosphere is equally certain to occasion sickness and disease, if its inhalation be persisted in. The evils of exhausted air are also more to be guarded against, because persons can live in it without being aware of its danger, as far as their sensations are concerned. When we enter a crowded assembly on a cold day, the air is always at first repulsive and oppressive; but these sensations gradually disappear, and we then breathe freely, and are unconscious of the quality of the atmosphere. Science, however, reveals the fact that the system sinks in action to meet the conditions of the impure air; but it does so at the expense of a gradual depression of the vital functions; and when this is continued, disease follows. *No disease can be thoroughly cured when there is a want of ventilation.* It is related that illness continued in a family until a pane of glass was accidentally broken, and then it ceased: the window not being repaired, a plentiful supply of fresh air was admitted. Nearly all the churches in the empire require some artificial means of ventilation to render them physically fit receptacles for the body during a prolonged service. The Sunday-schools, also, as a general rule, are *very ill ventilated;* and lessons in the second hour are far worse rendered than in the first, solely arising from a semi-lethargic coma that comes over the pupils breathing a carbonic air, which has already done duty and been inhaled by others several times. However much to be regretted, it is still true that people will sometimes sleep during the sermon. Now, the minister must not be twitted with this; for, with the oratory of a Jeremy Taylor or of a Tillotson, people could not be kept awake in an atmosphere charged with carbonic acid, the emanations of a thousand listeners.*

Instances innumerable might be pointed out in connection with our trades and professions, showing that no one can break with impunity the law of nature, which demands that the food destined to nourish and warm the body should be converted into heat, and vitalised by a constant supply of fresh and pure air. The importance of this subject becomes more evident if we turn to a few statistics. In a life of fifty years a man makes upwards of 500 millions of respirations, drawing through his lungs nearly 170 tons weight of air, and discharging nearly 20 tons weight of the poisonous carbonic acid. It has been also calculated that, to ventilate a room effectually, every person requires ten cubic feet of fresh air per minute;† a church, therefore, 80 feet long, 50 feet wide, and 40 feet high, and containing 1,000 persons, would require the whole atmospheric contents of the building to be renewed every sixteen minutes. A room containing a million cubic feet of air, in which were assembled 10,000 persons, would likewise require a total change every ten minutes; and an apartment twelve feet each way, with ten persons in it, would require an entire change of air every seventeen minutes.

This quantity of ten cubic feet of air per minute for each individual is what is required to supply him with the amount of oxygen necessary for the performance of the functions of respiration; whilst the constant change of the atmosphere is imperatively necessary to get rid of the products of respiration, viz., the carbonic acid and aqueous vapour, as well as the effluvia from the body; for, disagreeable as it may be to refer to such a subject, this is the most noxious cause of contamination with which we are in the habit of coming in contact. "We instinctively," says Bernan, "shun approach to the dirty, the squalid, and the diseased, nor use a garment that may have been worn by another; we open sewers for matters that offend the sight and smell, and contaminate the air; we carefully remove im-

* Piesse.

† This is the minimum which should be allowed. In the House of Commons, which is, perhaps, the most perfectly, as it is certainly the most scientifically ventilated building in the world, Dr. Reid never allows less than thirty cubic feet of air per minute for each member, when the room is crowded, and on many occasions sixty cubic feet have been allowed.

purities from what we eat and drink, filter morbid water, and fastidiously avoid drinking from a cup that may have been pressed to the lips of a friend. On the other hand, we resort to places of assembly, and draw into our mouths air loaded with effluvia from the lungs, and skin, and clothing of every individual in the promiscuous crowd: exhalations, offensive to a certain extent from the most healthy individuals, but which, rising from a living mass of skin and lung in all stages of evaporation, disease, and putridity, and prevented by the walls and ceiling from escaping, are, when thus concentrated, in the highest degree deleterious and loathsome."

The evils produced by allowing the carbonic acid from the breath to accumulate in the air have been already mentioned; those engendered by inhaled animal effluvia are still more fatal in their results; for, according to competent authorities, it seems to be an invariable result that the accumulation and stagnation of the breath and perspiration of human beings crowded for a period in confined air, and neglecting personal cleanliness, produce plague or fever that may be communicated to healthy persons by contact or respiration. The most memorable of this is the Great Plague of London, which was caused by the total absence of proper ventilation in the filthy and overcrowded hovels in which the greater part of the poorer population of London lived, together with the filth and putrefying abominations which habitually filled not only the streets but even the houses of the lower classes. According to Bernan, the gaol fever was another disease which, arising from a neglect of the vital necessity for fresh air, was, a few centuries ago, an object of dread to society. The unfortunate and the criminal alike were immured in damp, cold, ill-aired dungeons, and kept in a state of inactivity. They inhaled the pent-up noxious effluvia emitted from their own bodies; and, from the want of means for personal purification, their clothes and bedding during their incarceration became saturated with the fatal exhalations. In this condition the miserable prisoners engendered, and became victims to, a disease of deadly malignity. They sickened, and with little apparent illness they died. The prison-house was thus the focus of a contagion that spread far and wide beyond its walls, and spared few who were so unhappy as to come within its influence. It was remarked, that although a prisoner happened to escape the infection, his clothes, nevertheless, emitted a pestilence that scattered death around him wherever he went. The assizes held at Oxford in 1577 were long remembered, and were called the *Black Assizes*, from the horrible catastrophe produced on that occasion by the gaol fever. Baker, in his Chronicle, tells us, that *all* who were present in court died in forty-eight hours—the judge, the sheriff, and 300 other persons!—so terrible was the retribution suffered by the community for its hardness of heart in denying to criminals even those personal requirements necessary for avoiding disease and preserving life.

Another similar catastrophe is recorded by Blaine as having occurred in 1750. During the sessions a sickening, nauseous smell was experienced by the persons in court, and within a week afterwards many who had been present were seized with a malignant fever. Among those who died were the Lord Mayor, the two judges, an alderman, a barrister, several of the jury, and forty other persons. It was remarkable that the prisoners who communicated the infection were not themselves ill of fever; and it was still more remarkable that none of those who were ill of it (to the greater number of whom it proved mortal) communicated it to their families or attendants, which showed that persons who were treated in clean and airy apartments, as those were who fell victims to it, do not communicate the disease to those in the constant habit of attending upon them.

Historians relate with just indignation that nearly three hundred martyrs died at the stake in the reign of the bigot Mary. But how insignificant appear the number and sufferings of these victims of regal fanaticism when compared with the tortures of suffocation and death from stench that were endured by thousands of persons in this and succeeding reigns, when every prison was a legal sepulchre.

Equally striking are the *good* results which have followed a judicious application of ventilation where it was formerly absent. It is scarcely possible to conceive a more repulsive and abominable state than that in which our ships of war were during the latter part of the last century, owing to the disregard, or rather the studied opposition, with which those then in authority treated all proposals to improve their ventilation. We regard other nations with whom we happen to be at war as our enemies, but a few figures, eloquent in their simplicity, will convince any one that incapacity, narrow-mindedness, or obstinacy in high places, are vastly more fatal in their results to our gallant sailors than the most formidable enemy they ever faced. In the year 1779 there were 70,000 seamen and marines voted by Parliament; of these 28,592 were sent sick to the hospitals, or 1 in 2.4. In 1784, of 85,000 men afloat, 21,371 were sent ashore sick within the year, or 1 in 4. But in 1804, when ventilation was partially, if not thoroughly, carried out in every ship, of the 100,000 men of which the navy that year consisted, 11,978 passed through the hospital, or only one in 8·3.

The evils of inefficient ventilation have been strikingly shown in the case of the Custom House, where the difficulty of ventilating a large public room has been very manifest. There the atmosphere in some of the apartments was so defective, as to produce general symptoms of ill-health among the officers whose official seats were placed in it. The functionaries were described to have had "a sense of tension or fulness of the head, with occasional flushings of the countenance, throbbings of the temples and vertigo, followed not unfrequently by confusion of ideas" that must be very disagreeable to persons occupied with important and sometimes intricate calculations. A few were affected with unpleasant perspiration at their sides. The whole of them complained of a remarkable coldness and languor at their extremities, more especially the legs and feet, which became habitual. The pulse in many cases was more feeble, frequent and sharp, and irritable, than it ought to have been. The sensations in the head occasionally rose to such a height, notwithstanding the most temperate regimen of life, as to render cupping requisite, and at other times depletory remedies; and costiveness, though not a uniform, was yet a prevailing symptom.

The identity between the combustion of a candle and that living kind of combustion which is ever going on within us has thus been clearly exhibited. Like the candle, man depends for his life and vigour upon the chemical action exerted between the atmosphere and combustible matter; the combustion of the latter giving rise in each case to heat and vitality. Like the flame of a candle, too, man's health and strength languish and faint unless properly and uninterruptedly supplied with that mysterious breath of life—oxygen; whilst the feeble hold which the flame, even under the most favourable circumstances, has upon the wick, and the ease and totality of its extinction by the most trivial circumstance—not only by a deprivation of air, but even by a puff of wind too much,—should teach us, even in our pride of health and strength, that our spark of life may be extinguished by the same causes, and our bodies may be left lifeless as a snuffed-out candle. The food—the combustible matter—may be there all the same; the oxygen may be in waiting, ready to combine with it; but the spark of fire, that spirit of life which man receives direct from his Creator, is absent, and without this all else is as nothing.

One more lesson from our candle, and we have done. What becomes of the human soul when it has left the body? What becomes of the flame when the candle is extinguished? Must our philosophy halt here? or will it turn round upon us, and attempt to prove, in scientific jargon, that there is no such thing as a future? We think not. We believe that, as the relationship between the candle and man bears strict analogy from the first kindling of the mysterious vitalising principle, through the varied phenomena of life, in sickness and in health, and even in the more mysterious phenomena of extinction—so can the analogy be carried further into the dim shadowy realms beyond.

ON CELL LIFE.

BY DR. A. FICK, PROFESSOR OF PHYSIOLOGY AND ZOOLOGY, ZURICH UNIVERSITY.

WHAT then can be these perfect individuals in the animal body? The answer to this is easy: they are the cells.

In order to show at once that I do not stand alone in this view, I would remind the reader of the opinion of a well-known labourer in the minute structure of the tissues, Professor Frey, of Zurich, who says of cells in his "Handbook of Microscopic Anatomy," "They represent living beings, both as regards their anatomical and physiological individuality." But what is a cell? To this question it is by no means easy to give a reply. A full and clear definition of a cell is not yet possible. Let us try, by the help of observation and dissection, to form an idea of the nature of a cell. It is well known that the organs of animals and of plants do not consist of a homogeneous mass, but are formed of separate parts which have definite forms and properties. The elementary components of one of the higher animals or plants are various in their character, as the microscope teaches us. Many tissues consist of solid filaments, others of pipes or tubes, which are filled with contents readily distinguishable from the tube-walls. These elementary parts may exhibit, in their fully developed condition, great variety and differences, but in the earliest stages of development they are not distinguishable from one another.

Where a tissue is about to be developed, a number of small bodies are observable from the commencement always wonderfully alike in form. They appear to be rounded lumps of a thick slimy substance; somewhere in the inside of each lump there is a clear, well-defined, and somewhat transparent globule, with a dark spot in the middle. Such a body as this is called, in the restricted meaning of the word, "a cell;" the transparent globule within it, "a nucleus;" and the dark spot in the middle of the globule "the nucleolus." The formation of the most complex tissues of the animal body takes place in the following manner only: the original component cells multiply themselves. This multiplication takes place (as far as sound observations have ascertained) entirely by the subdivision of the mother cells, a process which is continually going on; the nuclei divide so as to separate the nucleoli into halves, and the surrounding material draws itself together into two masses around each of the newly-formed nuclei, and at last the masses become detached from one another.

Connected with the preceding statement, there is a most important question, relating to our knowledge of organic nature, in regard to which a lively contest has lately been renewed. The question is, whether individual creations of organic beings occur? Here the problem comes before us in a still more general form—namely, are there special creations of cells? The most reliable observers at the present day are agreed that the creation of a cell in an animal tissue has never yet been seen with certainty, and that each cell is the offspring of another, from which it has separated by division. Here, then, we have already decided evidence that the cell is to be regarded as an organic individual.

In the development of a tissue, the newly-formed cells increase by subdivision. They grow, according to the character of the tissue, into various forms, and in most cases secrete the materials which they have elaborated within their walls. Generally they become compacted together on the surface, and in many tissues in a fully-developed condition they constitute the chief mass of the whole tissue. Always, however, as long as the tissue is living, there must still remain those bodies, which are cells in the true sense of the word—the little lumps of that mysterious gelatinous matter which has in recent times been called Protoplasm. It is probably within this substance that the final problem of organic life lies concealed. Its peculiarity does not consist in its shape, but in the substance itself

for wherever it is, in whatever form it may occur, *there* we have manifestations of organic life. The *chemical* and *physical* properties of this protoplasm (*spreading out*), as far as we at present know, are to a great extent passive (probably it is a compound of different chemical bodies, among which albuminous or white-of-egg-like substances are the most prominent); all the more remarkable, therefore, are its *physiological* actions. Above all, it is important to keep this fact in mind, that wherever a separate piece of this substance is found growing and developing, it is (in accordance with the nature of the procreation of cells described above) a portion separated from another protoplasmic mass; in no case, so far as reliable observations have extended, is it ever spontaneously developed from its constituents.

But what is it that gives us a right to the paradoxical supposition that each protoplasmic lump, individualised by its central globule or nucleus—each cell in the animal body—is a separate animal *subject*, with individual animation? In fact, I ascribe to each cell, not only of the animal, but also of the vegetable body, *animation* in the truest meaning of the word. To express my view as clearly as the obscure nature of the subject will admit, I am of the persuasion that this thing which *objectively* appears to us as a microscopic, minute lump or knot of gelatinous matter, is in itself, *subjectively*, a thing, similar to our own personal self; a thing conscious of the influence of other things (*sensative*), and of its own influence on other things (*volitional*).

There are numberless animals belonging to the order infusoria which consist of a single cell. Such an animal, for instance, is an Amœba, a minute, microscopic, protoplasmic mass, with nucleus and nucleolus. If its actions are observed under the microscope, one can see how it alters the form of its body at will; how it sends forward prolongations here and there, draws out the mass of its body, and so changes its place. On outward irritation, it generally rolls itself up into a bullet-shaped lump, and rapidly draws in again all the prolongations lately stretched forward. Often one may observe it engulf smaller bodies in its substance, where they are changed—one may say digested—and half disappear, the undigested leavings being again ejected. The little animal grows, and goes on propagating itself by division.

A cell which belongs to the tissues of one of the higher animals behaves exactly in the same manner as a single-celled infusorium. For example, in the blood we have cells; the so-called white blood corpuscles, which are exactly like certain infusoria. Thus they stretch out prolongations of their substance subject to their will, and upon irritation and the like, they show the well-known reactions. The cells in connective tissue deport themselves similarly. They crawl regularly about in certain chasms in the substance of the tissue formed beforehand, which they elaborated for themselves, which, in fact, they have constructed as their dwelling. What is particularly worthy of attention is, that these cells when they have left the tissue, can move themselves for some time in a fluid, and show all the phenomena described. These facts are truly among the most beautiful acquisitions to our knowledge lately derived from microscopic research. They had for a long time escaped the attention of microscopic observers, because animal tissues were not examined under the same condition in which they exist in the living organism. It has already been mentioned that cells in the tissues of highly organised animals are exactly the same in their growth and reproduction as single-celled organisms. And, in the last place, to complete the identity, all the cells of a whole animal are actually the brood of one single cell—namely, the ovum. We have here before us exactly the phenomena which we regard as the characteristics of an animated being—movement at will, and reaction on outward irritation. Thus, then, we can by a well-connected chain of strict analogies, arrive at the proposition which was placed before us. Each cell, whether it be an

independent animal or part of the tissues of a higher organism, is in itself, *subjectively*, an animated being. The want of self-dependence in the cell, which forms a part of the tissue of a higher animal, is really not greater than in the single-celled infusorium, which lives freely by itself. In fact, each organism has its own conditions of life; and as the tissue-cells can only live, for any length of time, in a certain fluid, or in their appointed self-wrought habitation, where they dwell as a compound organism, so can certain single-celled infusoria live persistently only in certain fluids; they also die if placed under conditions to which their organisation is not adapted. I am not, moreover, at all certain, as before said, of the impossibility of a cell, if once removed from the blood or connective tissue of a higher animal and placed in another soil (as it were) under favourable auspices, proceeding with its life as an independent animal, and becoming the mother of a brood of infusoria.

The best type of such an association of organic individuals is a plant. Here we see different groups of cells execute different offices which benefit the whole plant. One set extracts material from the ground, another elaborates it in various ways; others, again, draw material from the air; others are especially fruitful in producing new generations. But we do not attain to the higher efforts of physical activity in the plant. The reason of this is easily seen.

In plants, each single cell surrounds itself directly with a membrane of the so-called cellulose, the substance which we have before us in wood, in cotton, and in paper. The cells are, by means of this, individually shut up; they can, it is true, influence one another to a certain degree, in that they can transmit material to one another; but they cannot influence one another to an unlimited extent; they cannot share their conditions, their sensations, we may even say their experiences, with one another. Each, therefore, is confined to the bare circle of its own sensations (which we are as little able to dispute in plant-cells as in animal-cells), and therefore it can reach to no higher grade of physical life.

In the higher animals there are numerous groups of cells which are disposed in a manner analogous to that observed in the plant-cells; that is to say, they lie isolated, yet near each other, though not enclosed in the same hard dwellings as the plants. Such aggregates of cells, for example, are the blood and the epithelium. The epithelium is the name given to the layers of the cells which lie arranged like strata wherever an organic structure is bounded towards external space, as the outer skin (epidermis), and the slime-skin or mucous membrane which lines the surface of internal cavities open to external space. Many other tissues also form the same kind of cell-masses, upon the principle of the plant's organisation. Their action has long been designated as "vegetative," correctly referring to the analogies which they present to plant-life.

In the higher animals a new system of cells is added to this vegetative group, which are disposed on a totally different plan. It defines what is truly *animal*, and its actions are rightly designated "animal."

In fact, the difference between plants and animals does not really lie in their elementary components. Both kingdoms are, as we saw, and as most observers in both now admit, constructed from elements of a similar nature—from cells. Among the simplest organisms, philosophers have been in much doubt in which of the two kingdoms they shall place those beings consisting of but one or few cells, and perhaps there is nothing to justify the assertion of a sharp boundary. The distinction can only be clearly shown where one has to deal with complex organisms formed of many cells. The true characteristics of the two kingdoms are to be found in the manner in which the colony is built up by its individuals, and thus especially in that system of cells just mentioned which gives its peculiarity to the animal kingdom. This system is a series of cells widely spread through the whole body, in which the protoplasmic matter is maintained in un-

broken continuity throughout, by fine, long, threads. It is the "nervous system." Let us consider this wonderful structure somewhat more closely, and, indeed, let us bring it before us in that form which it takes in man, the highest of now known animals. The cells of the human nervous system are generally packed together in more or less numerous groups, which are called nerve-knots or ganglia, whence the name ganglion-cell is derived for the cells of the nervous system: they are simply, as all cells are, nothing more than protoplasmic lumps with nucleus and nucleolus. The nervous ganglia lie distributed over the whole body, in some places sparingly, in others profusely, and are bound together with connecting cords of the protoplasmic thread, which, as was said, always brings two cells into conjunction. Each such protoplasmic thread is encased in a true sheath, and forms with it what is called "a nerve filament." It must further be noticed that each cell commonly is connected, not only with one, but often with many other cells by means of nerve-filaments.

Besides these filaments which establish the communication of the nerve-cells among one another, there are others which communicate at one end only with a cell, and at the other end are connected with structures of a different nature. There are two sorts of these filaments, differing very much in kind, though not in their essential nature. The one set—in the strictest meaning of the word—proceeds outwards from the organs of sense, and is destined to convey external impressions to the nervous system. The others, which terminate in the muscular fibres, are appropriated to carrying the active influence of the nervous system to the exterior.

We have now a complete picture of the nervous system in man, when we add that in him, as well as in the four higher classes of animals, by far the greatest number of the nervous elements—that is, of nerve-cells and connecting filaments—are packed together in a continuous mass, and shut up in the canal of the backbone and those cavities of the skull which are continuous with it. These great nervous masses are known as the brain and spinal-cord.

The HYDROPULT, a valuable invention, for Spouting Spine or Limbs, and other purposes. Price 37s. 6d. J. and G. Haywood, Market Place, Derby.

But it must not be supposed that all the sentient filaments of the more highly sensitive organs, of the skin, and so on, pass directly to the cells of the great hemispheres of the brain, and that the motor nerve-threads go without interruption hence to the muscles. On the contrary, there are placed between the periphery and the great cerebral hemispheres, as mentioned already, a lower authority of the bureaucratic mechanism. This is the accumulation of ganglion cells in the spinal-cord and mid-brain. Especially in this last part of the nervous system, and in the so-called "medulla oblongata," in the places where the great nerves of sensation flow in, there are masses of cells representing the highest executive officials. Here the raw materials of sensation are arranged.

Duration of Life in Europe.—The *Clinique Européenne*, published by Dr. Kraus, in an article on this important subject, states that before 1789 Duvillard calculated that out of 100 individuals 50 only reached the age of 20. From 1823 to 1831, according to Blennyme's observations, the proportion was 60 per cent. According to Demonferrand, 7 individuals out of 100 reach the age of 80, 2 only the age of 85, and 1 that of 89; while out of a million only 640 die within 90 and 99. Mathieu reduces the 640 to 491, and finds that out of that number only 9 reach the age of 97, and only four that of 99. According to Duvillard and Demonferrand, only 2 out of 10,000 reach the age of 100; but in this respect there are some privileged places: thus at Carlisle in Cumberland, 9 out of 10,000 attain that age; while at Paris, scarcely a year passes without some person dying 100 years old or upwards. Benoiston de Chateauneuf, calculating upon 15 millions of individuals, finds that out of 100 only 44 reach the age of 30; 23 that of 60; 15 that of 70; 4½ that of 80; and eleven-sixteenths that of 90. The average duration of life is now about 39 years and 8 months; 20 years ago it was only 36; in 1817 it did not exceed 31¼; before 1789 it was only 28¾; and M. Villerme shows that at Paris in the 14th century, it was not more than 17 years; in the 17th century, 26; and in the 18th, 32. In France there is only 1 septuagenarian for 33 individuals, 1 octogenarian in 160, and 1 nonogenarian in 1,900. At Geneva, the average of human life in the 16th century was 18 years and 5 months; in the 17th, 23 years and 4 months; and from 1815 to 1826 it was 38 years and 10 months. In England the average in 1840 was 38 years; in France, 36½ years; at Hanover, 35 years and 4 months; in Schleswig Holstein, 34 years and 7 months; in Holland, 34 years; at Naples, 34 years and 7 months; in Prussia, 30 years and 10 months; in Wurtemberg, 30 years; in Saxony, 29 years. These facts show the average duration of life in Europe as constantly increasing.

MANCHESTER SMOKE.

Mr. John Leigh, Registrar of the Deansgate district, has sent another valuable communication to the Registrar-General, which appears in the quarterly return just published. In a former paper, Mr. Leigh urged that the deterioration in health, and the excessive mortality, were mainly due to the vitiation of the atmosphere. While the annual rate of mortality for the whole of England is only 22 in 1,000, in Manchester it is, taking a ten years' average, 31, and in 1865 was 35·6. Mr. Leigh, in this second paper, enters more fully into the subject of the impurities of our atmosphere and its effects. He divides the atmospheric impurities of towns into solid, vesicular, and gaseous, shows that the first, which occupy the lower stratum, act as irritants to the respiratory organs; that the vesicular impurities, which form the medium, are direct excitants of many types of disease; while the purely gaseous enervate the system, and render it an easier prey. "Of the solid impurities," says Mr. Leigh, "the principal is coal smoke, which forms a continual dark and dense canopy over the town, and causes a murkiness in the streets from which they are never free. On the finest day the air is darkened by haze, through whose wide extent the prospect seems as if it were bounded by an impenetrable wall. From a distance of four or five miles in the country, particularly on the approach of evening, the slanting rays of the sun give remarkable definition to the cloudy pall, and indicate very distinctly the site and limits of Manchester."

Mr. Leigh continues:—"If smoke is passed through a column of water in a suitable apparatus, a quantity of black fuliginous matter is separated from it, and some salts of ammonia are dissolved out of it by the water. If it be passed

through a similar apparatus containing alcohol, a portion of bituminous matter is dissolved out, though this is still better accomplished by the substitution of highly rectified coal naphtha. There remains a quantity of purely gaseous matter, the composition of which is well known. The black matter separated by the water is constantly seen floating in a smoky atmosphere in distinct particles, sometimes of considerable size, known popularly as 'blacks.' They settle in time on the streets and footpaths, find their way into the houses, cover all articles of furniture, soil and damage drapery, curtains, carpets, table covers, similarly affect wearing apparel and other surfaces, till it is generally recognised that light coloured clothes cannot be worn in Manchester, nor the hands remain clean if ungloved. But these black particles always in the atmosphere are of necessity constantly inhaled by the inhabitants, constantly received into the lungs, whether those lungs are healthy or not. . . . . There can be no doubt that the constant inhalation of particles constituted as Braconnot has shown these to be, compounds mainly of carbon, bitumen, and sulphate of ammonia, must be highly irritating to the lungs, and productive in many instances of an amount of inflammation sufficient to induce incipient phthisis or bronchitis, or to determine the recurrence of these where a predisposition exists. It is no answer to say that many people living in large smoky towns continue healthy, and attain to a considerable age. There are strong, healthy people with great powers of resistance, who form exceptions in all circumstances; but the general condition of old people, and of those approaching old age, in the working classes of Manchester, is bronchitic in a greater or less degree; and at all ages men, women, and children of delicate organisation or scrofulous diathesis, or whose state of health has been reduced by other causes, are very much disposed to take on phthisical or bronchitic disease, under the irritating effects of a Manchester atmosphere."

Mr. Leigh shows that the mean annual mortality for lung diseases is greater in Lancashire and Cheshire than in any other divisions of England, with the exception of London. "Besides the palpable and offensive black particles of which the clouds that issue from our factory chimneys are composed, there is a more finely precipitated matter which in the country curls among the trees from the roof of a cottage, and in Manchester forms the constant haze of our streets. I do not think any scientific investigation has yet been made of it. It is not gaseous, for it does not diffuse; it is not simply vaporous. When it saturates or charges a November fog it is sticky, and excessively irritating to the eyes and throat. It proceeds from the imperfect combustion of bituminous matter, and partially from the distillation of the least volatile products of coal. Since it is so irritating to the eyes and lungs when made more dense by a fog, it must in a less degree be a constant source of irritation under the ordinary conditions of a smoky atmosphere. From experiments I have made on it, I am satisfied that it is in some degree bituminous. From the way in which coal is ordinarily burned in the furnaces of manufactories, there is given off, in addition to the visible smoke, a number of invisible true gases, some of them resulting from the imperfect combustion of the coal. These are carbonic oxide, light carburetted hydrogen, sulphuretted hydrogen, and possibly a little cyanogen and heavier carburets of hydrogen. The gases necessarily evolved are carbonic acid and sulphurous acid, with aqueous vapour. The natural tendency of all these gases is to diffuse themselves into the general body of the atmosphere; but the diffusion is, as regards some of them, to a considerable degree impeded by their extreme solubility, and by the quantity of moisture generally present in the atmosphere of Manchester."

THE READY METHOD IN SUSPENDED RESPIRATION IN DROWNING, &c.—BY DR. MARSHALL HALL.

1. Treat the patiently *instantly, on the spot, in the open air, exposing* the face and chest to the *breeze* (except in severe weather.)

I. To Clear the Throat—

2. Place the patient gently on the face, with one *wrist* under the forehead; [*all fluids and the tongue then fall forwards, leaving the entrance to the windpipe* FREE.]

If there be breathing—wait and *watch;* if not, or if it *fail*,—

II.—To Excite Respiration—

3. Turn the patient well and *instantly* on his side, and—

4. Excite the nostrils, the throat, &c., and dash cold water on the face, previously rubbed warm.

If there be no success, *lose not a moment*, but *instantly*,—

III.—To Imitate Respiration—

5. Replace the patent on his face, *raising* and supporting the chest *well* on a folded coat or other article of dress;

6. Turn the body very *gently on the side and a little beyond*, and then *briskly* on the face, alternately; repeating these measures deliberately, efficiently, perseveringly, *fifteen* times in the minute, occasionally *varying* the *side;*

[*when the patient reposes on the chest, this cavity is compressed by the weight of the body, and expiration takes place; when he is turned on the side, this pressure is removed, and inspiration occurs.*]

7. When the *prone* position is resumed, *make* equable but efficient *pressure*, with brisk movement, *along* the back of the *chest; removing* it immediately before rotation on the side;

[*the first measure augments the expiration, the second commences inspiration.*]

*** THE RESULT IS—RESPIRATION;—AND, IF NOT TOO LATE—LIFE!

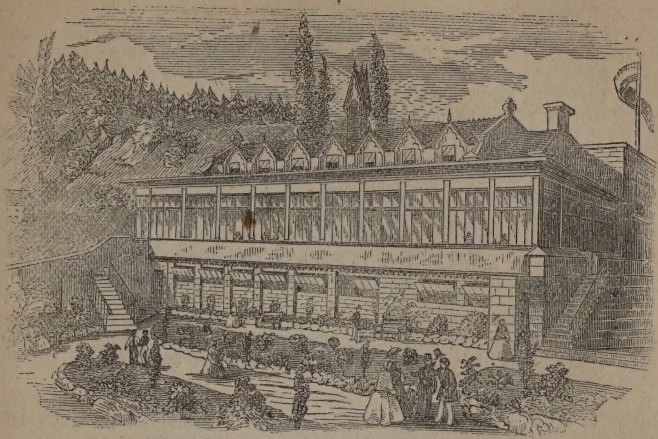
IV.—To induce Circulation and Warmth—

8. Meantime rub the limbs *upwards*, with *firm grasping pressure* and with *energy*, using handkerchiefs, &c.

[*by this measure the blood is propelled along the veins towards the heart.*]

9. Let the limbs be thus warmed and dried, and then clothed, each bystander supplying a coat, a waistcoat, &c.

10. *Avoid the continuous warm-bath, and the position on or inclined to the back.*



OUR THIRD ENLARGEMENT OF INSTITUTION.

PREFACE TO A FORMER EDITION.

HAVING, about five years ago, printed (mostly for gratuitous distribution) an edition of 30,000 of a pamphlet on "Hydropathy, and its Application to the Cure and Prevention of Disease," I have frequently since been asked to publish another edition, giving the improved methods discovered and the experience we have had in the treatment of the many hundreds of cases which have passed through our hands since that pamphlet was published. I have long been desirous of doing this, but the incessant calls upon my time have put it out of my power, and now I can only accomplish my work by using that time which should be allowed to the repose of the body. The many very gratifying testimonies which I have received, both from this country and from other parts of the world, to the usefulness of my former pamphlet, and the valuable improvements we have been enabled to make in the application of Hydropathic treatment, have induced me, now that we have removed to our summer retreat at Riber Hall, on Riber Hill,* within view of the Hydropathic Establishment at Matlock Bank, to devote some of the early hours of the morning in endeavouring, by God's guidance, to make this pamphlet more generally useful. Here—where the sun at this season has risen high in the heavens at five o'clock, and the chorus of the birds has commenced still earlier—where there is a very extensive and beautifully-varied landscape of mountain, valley, and wood—there is every inducement to throw off drowsy feelings, and rise to work for the glory of God and the benefit of mankind. Yet sometimes, even in this charming spot, melancholy thoughts will cross the mind, especially when I reflect that many of the former inhabitants of this ancient and beautiful Hall may not have been wise, in the day of their pilgrimage, in securing the salvation of their immortal souls, by being "born again of water and the Spirit," without which none who have heard the Gospel tidings, the Scriptures say, shall enter the kingdom of heaven. Should there have been such, I sometimes think, when viewing the grand panorama of mountains around, how dreadful must be their remorse and self-reproach now they have discovered that they might have had, by a life of faith and obedience, the blessings of this life and the fruition of that which is

* I have since built a lodge on the summit of the hill.

eternal; for all the treasures of earth, and all its beauties and its pleasures, are but shadows of happiness in comparison with the great realities to be enjoyed in the regions of the blest. May such thoughts of such possibilities quicken the living to a lively sense of the realities of the same! Here also is the sight of a Druidical temple, the remains of which, standing on the summit of the hill overlooking Darley Dale, were, by barbarous hands, removed but a few years since. It was, indeed, a commanding spot for such a purpose. The mind is led back to the time (probably more than two thousand years ago) when the inhabitants of the surrounding district, far and near, might be seen on the first day of November ascending the steep mountain side from the surrounding district, bringing their offerings to the priests, and carrying back the sacred fire, to re-light their family hearths, which had all been extinguished by the priests' command the evening before; and no doubt also often to witness human sacrifices. This worship was put an end to by the Romans, who came into this country B.C. 55; and who, on this hill, in after-times, made large fires, when the south wind blew, not for sacrifices, but to smelt the lead ore so abundantly found in this locality.

Very frequently my patients have requested me to print my personal experience of Hydropathy and the reasons which induced me to have a Hydropathic Establishment. I promised to do that when I brought my new pamphlet out, and, at the risk of incurring criticism, I now perform my promise.

It may seem to some persons presumptuous in me, having had no regular medical education, to write on the curative principles of any treatment; but the very gratifying success of our efforts, however, for the benefit of our fellow-creatures, has emboldened me to go on with my work. We may truly say, we have seen so many hundreds restored or relieved, without any serious errors, that we cannot doubt we are in the path God designs us to pursue. Our time, health, and strength, and all the means of a not inconsiderable property, are by us willingly, and even thankfully, devoted to our work, with a single eye to live to the glory of God and for the welfare of mankind. My wish is to encourage others to work and stand by the true principles of the Gospel, and leave the result to God, without any fear of the consequences.

After devoting many years to a manufacturing business, and having accumulated more than sufficient for ordinary wants, it was my intention to manage my business principally by deputy, and, retiring from it, to see foreign countries, making England occasionally my home. The idea of repose and leisure after labour which few in my circle have gone through, was the bright time I had in anticipation viewed with pleasure; and many a dark fatiguing day has that pleasant prospect helped to cheer. A regular attendant at the Established Church and the sacrament of the Lord's Supper, on terms of close intimacy with those ministers and such persons as had the reputation of being Evangelical in their doctrine and practice, self-satisfied with obeying the outward forms of religion, and having the reputation of being both religious and charitable, I believed I was quite justified in looking forward to enjoy the fruits of my labour in ease and self-gratification. "Man proposes, and God disposes." We took a journey through France, Germany, and Switzerland; and on our return I was seized with typhus fever. The great varieties of temperature I had gone through, the fatigue, and, more than all, the unwholesome food, and worse, the wine and malaria met with in some parts, had caused that fever which brought me to the brink of the grave. My doctor visited me on my arrival home; said I was in a bad state; gave me medicines, and told me a short time would develop my complaint, which indeed that short time soon did. Instead of our soothing wet-sheet envelope, to relieve the parched hot skin, I had only an aggravation in the shape of drugs. Soon the fever rose to madness and delirium; I entreated the doctor to give me something to cool my parched mouth, but all his accumulated knowledge of the London Pharmacopœia, with his certificate of qualification for the treatment of disease, given to him by the examiners of Surgeons' and Apothecaries' Halls, availed not for my relief: the over-ruling hand of God, and a healthy constitution, carried me through that fiery ordeal. Once the servant bathing my arms in cold water, I exclaimed, "What a relief!" It was the only agreeable relief I experienced; but of course, only being

done locally, it had no control over the fever, which was burning throughout my whole body. I was exhorted to look to Christ for the repose of my mind. I replied, I had no hope. My time of trial was come, and I found no witness in my own heart that I had ever been anything but a formal, professing Christian. I soon became insensible to all outward and bodily sensations; but my mind was often exquisitely alive to the whole course of my past life. I saw my character clearly, and it was that of a hypocrite. I believed I was shut out from the presence of God for ever; and felt the justice of my doom. God mercifully brought me back to outward consciousness, but I was long in arriving even at a low state of convalescence. My mind, however, was fully awakened to the awful folly of living for the gratifications of this life; but how to find peace, I saw not.

In a very few months after, being somewhat convalescent, I, with my wife, left home to seek for repose of mind in travel and change of scene. Some good, sincere Christian workmen in my employ pointed out to me the simple means of gaining peace; I tried it, and failed, because I was yet unacquainted with my own unchanged heart. There was yet disappointed ambition, and love of this world's good opinion, ruling in it. I found it was indeed a strong man armed keeping the house, and holding me in an iron cage of misery. Travel again brought no relief; and in a condition hopeless of life, I was advised to go to a Hydropathic Establishment, which my state of desperation only would have induced me to try. There, in November, worn as I was to a skeleton, and distracted in mind, the bitter cold-water treatment aggravated my sufferings at first considerably; had I but commenced with our *mild* system instead, until the body had somewhat recovered its tone, I should have been saved much unnecessary suffering. I had not slept above an hour or so at once for months. However, after a few weeks at the establishment, I slept pretty well, I got tolerably good functionary action of the stomach, &c., and after nine weeks returned home. Here, however, old recollections soon threw me down again; I had not yet learned to count all things but loss for the excellency of the knowledge of Christ. In nine months I returned again to the Water Establishment for three months, and regained bodily health, but no relief to my mind. We set out on a tour to Cheltenham, the coast of Devonshire; then to Dover, and crossed over to France; came back to England, and returned to Malvern, and thence to Cheltenham, where I took No. 11, Suffolk Square, for the winter. I purchased the estate of Rose Hill, near Pitville, then the residence of Admiral King. Shortly after this, I found peace in believing. I had been labouring a good deal in visiting the poor and schools, and practising self-denial in those things I formerly rejoiced in; determining to seek for happiness in the favour of God, through the merits of my Redeemer, and, knocking in humble sincerity, the door was at length opened to me. I entered the fold of the Great Shepherd, and experienced unbounded joy and confidence. My wife, I was thankful indeed to find, heartily reciprocated my feelings. We then determined to return amongst our work-people, and try to live that life of usefulness God had so graciously laid out for us, but which I had formerly neglected to realise for the vanities and unsatisfying things of this world. I immediately went by London to Ben Rhydding near Leeds, purposely to kneel down in the room in which I had suffered so much from bodily ailment and despair of mind, to thank God for all His goodness to me, and to dedicate myself and all I possessed to His service.

I returned to Lea Bridge (seventy miles), and sat up part of the same night burning my foolish ballads and light books, upon which even clergymen had with me often wasted precious time. I locked up my extravagant plate, ornaments, equipage, &c., until I could give them away or sell them for the benefit of religious societies, which I did shortly after. I then brought my wife from Cheltenham, and we commenced our new and better work. Soon, however, we found that we had crosses to take up, when we would no longer comply with the customs of our former circle, in giving or attending dinner or evening parties, and in keeping our house exclusive for a certain class. We found instead ample consolation in the peace within, and in the communion of humble and sincere Christians. I built six chapels and two schoolrooms in different parts of the country, some, where I had work-

people. I assisted many poor societies, and worshipped with our own people in one of the chapels I had built here, imposing nothing but the simple Word of God on the congregation. It is now about seven years since we embarked on this course, and we have found every year to bring more solid peace and joy; and we know it will be thus with us until God shall take us to serve Him in a brighter sphere.

On returning home, I took in a few men, upon whom to try the Hydropathic remedies, which proved successful; and many more making application, I made a place for the free board, lodging, and baths of a certain number of males and females: and hundreds since have here found restoration to health of body, and peace of mind, through the renewal of the Spirit. Persons in our own station then applied for advice, seeing such wonderful effects being produced, sometimes on their own servants. We did not know where to recommend them to go, as we had little confidence in the mode of treatment pursued at some establishments, which is often indeed the "cold water" practice. Some could not afford the expense (which at all the principal establishments is about £18 for the first month); so we made our house a free hospital, until we found we could not afford room enough. I then bought a small house at Matlock Bank for six patients, board, lodgings, and treatment at 3s. per day. Uniform success in the treatment soon brought more; the place was enlarged. Soon again we had to refuse applicants; and thus has it grown until we have had one hundred and ten at one time under treatment. Although I have not had a regular medical education, human physiology has long been a pursuit of much interest to me, and I now find the benefit of my early studies of these subjects. The feeling of responsibility, from the great number who have been at our establishment and the free hospitals, has also induced me to labour hard, and spare no expense, in the acquirement of physiological knowledge; and the actual practice, in seeing the application of Hydropathic treatment to so many hundreds during the last six years, has given us confidence in our plan of treatment, from the great success in so many cases of persons who had tried medicine and even Hydropathy before, without good effect. Our system of mild treatment, with the application of bandages, not used in the same way elsewhere, and some newly invented baths, have gained such celebrity, that we are now compelled to limit our admissions. I could refer to physicians, surgeons, homœopathic practitioners, clergymen, Dissenting ministers, military and naval officers, merchants, manufacturers, &c., from whom I have often received testimony, acknowledging the benefits derived from our mild practice. In the case of females especially, this treatment has done wonders. (*My wife has sole charge of female invalids.*)

The charge at the establishment is fixed with an intention to make it neither a source of pecuniary emolument nor of loss. A large sum of money has now been invested; and the baths are models for Hydropathic Establishments or Public Baths, and I am very desirous of calling the attention of the patrons of the latter to their superiority over the ordinarily-constructed baths, which not unfrequently cause irreparable injury to the body. No person can use a plunge bath without risk. We could refer to patients who have come to the establishment for relief, whose maladies have been caused by plunging into a cold bath, or into the sea. Many escape injury by such bathing, but none practise it without the risk of being invalids for the rest of their lives, from congestion of the brain, asthma, or internal tumours, caused by the blood being suddenly driven on the internal organs and certain weak parts which are not able to return it. Females, especially, are liable to danger from plunge baths (see Mrs. Smedley's Manual, 2s.)

One of the principal objects I have in view in this work is to teach Hydropathic remedies for self-application, and to show the labouring classes how to manage many of the processes by the simple means within their reach, which, if acted upon, would often stay the progress of fever, consumption, and inflammation, or prevent their proceeding beyond the first symptoms. Resolution, and not sparing trouble, alone are necessary.

PREFACE TO ANOTHER EDITION.

AFTER SEVENTEEN YEARS' PRACTICE OF HYDROPATHY (*not the cold-water system*), and the distribution by sale or gift of forty thousand of this book on "Practical Hydropathy," and of thirty thousand of my wife's "Manual for Treatment of Ladies and Children," another edition of this work is unexpectedly called for, the last two editions of five thousand each having gone off rapidly. We had not the slightest idea or intention of having such a practice on our hands; and certainly, if we had thought it would have enlarged to its present extent, we should have shrunk from the work. God, however, has given us health and success; and so far from regretting having such an undertaking, we are unboundedly thankful, and willingly give up all our time and energies to it. We have not been away from home, with one exception of thirty-six hours, for many years; but the gratification in being instrumental in restoring or relieving so many hundreds of our fellow-creatures from suffering, and in many instances wresting them from the jaws of death, whose cases previous to applying to us were pronounced hopeless by the medical profession, fully rewards us for any amount of labour, and the deprivation of social intercourse with friends, or recreation abroad. Life is short with all, and wherever and in whatever way a sphere of usefulness is found, which promotes the spiritual and physical welfare of mankind, those who find such a work will find that it brings daily pleasure with pleasant retrospective and a joyful prospective. It is a work for the benefit of our species, and will last for an almost unlimited time when the workers have passed away. Not so where worldly ambition and aggrandisement of families are the aim of life. How few, especially young people born to wealth, are a blessing to society! How often the contrary does the society round every locality bear melancholy witness! Yet the object of life with many seems to be to work hard, save money, and get estates for their descendants. "*By the sweat of thy brow shalt thou eat bread*," &c., is God's decree. Providing for descendants leading an idle life is poor man's idea, and it bears fruit accordingly, when set in opposition to God's law: hunting, shooting, often leading to racing, county balls, and—ruin. I am led to make these remarks from having had hundreds of suffering, ruined patients, who have been brought up not with an expectation to work, but of independence; and it is melancholy to see how the getters of wealth try to deceive themselves and others by an affectation of self-denial, and of working for their children or relatives, when, in fact, it is their own love of money. They die often in harness, and their descendants squander the gains which should have equally benefited their relatives and the necessitous in the land. God gave no man an exclusive right to the fruits of the earth, and it is the mere accident of birth that one man is a labourer and another in other circumstances. The often-repeated declaration in God's word, and from teachers of religion, that we are only stewards, is little regarded. That God gives and that God can take away is mostly ignored, except the first. Man goes on with his projects for enriching his family, thoughtless that he has not one hour's surety of life: he returns to his dust and his thoughts perish; but his works, good or bad, follow him. "*Work while it is day, before the night comes, when no man can work.*" Work for the glory of God and the benefit of mankind, and all will be well both for present enjoyments and when the time of departure comes. Our motives have never been pecuniary profit—far from that. I have sacrificed a fortune in the undertaking.

For the first few years of our practice we averaged from two to three hundred patients per annum, and these mostly at our free hospitals, Lea Mills. These numbers gradually increased to about sixteen hundred per annum, and last year about two thousand. But for some years our want of bedrooms has kept the numbers about stationary. We have so repeatedly tried medical assistants and failed, that we were unwilling to increase our accommodation. The last year, 1867, however, we had to refuse so many that were hopeless of cure or relief by any other means, that we decided to build a new wing to our Establishment, and trust to Providence for help. Now,

March, 1868, the building, 200 feet long, 50 feet wide, and four storeys high, is being rapidly completed. Every appliance and convenience our long experience has taught us will be brought into operation. It is not that medical professors are deficient in knowledge that they have not succeeded in taking part or all of our work : far from it. They have, as a matter of course, more knowledge of the nature and functions of the body than any lay persons can possibly have, or education is of no use. But medical professors, from the highest to the youngest—Allopathic, Homœopathic, and even cold-water doctors—start from an unsound basis, and therefore cannot arrive at a successful result. They look upon disease as something to be driven out or stifled ; hence purgatives, blisters, leeches, cupping, setons, issues, cauterising, tonics, morphia, &c. &c. ; and so long as disease is not considered and treated as want of vitality, and nothing given or applied that will not only not farther lower, but will increase the vital heat of the body, so long will it be striking in the dark. Witness the continual alterations and disagreements in medical practice. We have a staff of bathmen and bathwomen whom we have no difficulty in teaching and qualifying to go out to most critical cases, and hundreds of cases in various parts of Great Britain and abroad have given testimony to their unerring sound judgment. When sent to critical cases, in no one instance have they failed to cure or relieve. They have not the prejudice of the profession to overcome, but act on Nature's laws, taught them at our establishment. We have not altered any of our principal applications since we began practice, and believe we could not now invent any more efficacious. The amount of superstition, however, in favour of legalised doctors secures them from having their plans brought to the test of reason and common sense, except to a very limited extent ; and patients rarely indeed apply to any but the regular doctor. If they knew how often these doctors are driven in their extremity to come to us, and send their families and relatives where they find restoration, perhaps people might doubt if the old traditional practice was quite correct. But superstition holds minds in bondage who, in business or legislation, are eminent for their astuteness. The fact is, the community are brought up under the impression that the structure and functions of the body are too abstruse for any one to understand but a doctor. The extent of this trusting, unreasoning confidence is marvellous. The friend of an eminent man, some years ago, came from under the hands of doctors at home and abroad not only without benefit but much injured. He got well with us. His friend was taken ill suddenly, and the former persuaded him to allow our applications to be used, which immediately gave him relief, and if they had been continued a few hours longer would have cured him ; he felt the comfort and relief, but true to the superstition about doctors, he ordered the appliances to be removed and the doctor to be sent for, who of course discarded all the comforting, and put him under his own regimen to his immediate sorrow. Still he stuck to the good old way, and is now an invalid. A friend of mine, seized with congestion of the liver, scoffed at our treatment as being ridiculous in urgent cases ; he was previously a remarkably stout man, but leeches, blisters, cupping, calomel, &c., killed him in a few months. Another case has occurred very recently, where exactly the same course of treatment was taken with the same fatal result. A friend of mine, in this neighbourhood, was seized similarly with congestion of the liver about Christmas. He was attacked with cold shivering and severe pain and sickness. I had, a few weeks before, given him some pads, mustard, and fomenting can, and begged of him, if ever he was ill, to use them instantly. He did so to his immediate relief, and was well in two days ; he was fully satisfied with the results. Another case, a female aged forty-six, had erysipelas in the face and head, which became alarmingly swollen, closing the eyes. She sent for one of my wife's bathwomen, who, knowing it was only obstructed circulation from cold, steamed the head and face by putting hot water in a vessel with a blanket over the head to keep the steam in. After an hour's steaming, a bread poultice in a bag was put over the face, and the head was packed in a cloth wrung out of hot water, with flannel and mackintosh over all to keep the warmth in. By the next day the swelling was nearly gone, and all the heat and uncomfortableness. A spongio-piline mask damped with warm water was put on, and flannel over the

head. Her old mother said she had never heard of St. Anthony's fire being cured in that way, and would not believe it. She sent for a doctor, who had the mask removed, and applied the orthodox lotions and aperients to "*cool the blood.*" The poor patient was soon cold enough, for she died in thirty-six hours. The doctor's prescriptions brought back the obstructions to circulation by weakening her vitality. I could give many such cases in our seventeen years' practice, yet exactly the same course is taken by the doctors, without the slightest regard to the oft-repeated fatal result. A gentleman came to me last spring who had lost the sight of one eye. His doctor did not give him much hope of saving the other, as his mixtures, dropped into the eye, with blisters on the temple and behind the ear, had not saved the other, but destroyed the sight of it. I could tell him with confidence, if he would stay with us he would have the sight of both eyes restored, and also regain his general health; he left us quite well. We comforted nature, made healthy blood, and that cured when the doctor's course, as it always is, diametrically opposite, failed. A gentleman, age fifty-four, came at the same time with a chronic disease, for which he had consulted the most eminent surgeons, who said an operation was necessary, but that it would be all but certain to be fatal. I could see no difficulty in the case, and he was thoroughly cured without any operation, merely by comforting the part and getting up the general health in a very simple way.

We are most anxious to have helpers in our work, or would willingly be superseded, as we cannot always go on, and as at present we see this Establishment will be at an end when we cannot longer attend to it. (*Thank God, this has been averted now. In* 1872 *the Institution is prospering under Dr. Hunter.*) I could give scores of cases in which our acquaintances and friends have stuck to the old, original doctoring system, and lost their lives, or been made cripples and sufferers for life, when they have witnessed the success of our treatment. Superstition and obstinacy is inherent in the human mind, and mankind will pursue it and suffer for it to the end of time. I am glad this is the case in manufacturing operations, or I should not have had the monopoly of our own manufacture, which I have had the last thirty years. Man is not generally a thinking animal, as Professor Huxley says he is, and which distinguishes him from the apes. Apes would not take a second dose of physic willingly, nor be blistered a second time without a hard fight for it, and would especially shun the society of doctors after one experiment. I have two letters to-day—a sample of hundreds I receive. The person mentioned in one had hurt his knee by falling on a piece of iron. The doctor leeched the part and painted it with iodine, which made the injured part weaker, and, as a consequence, the lameness was worse. Then a celebrated surgeon in a large town said the ligament was torn: he must have the limb strapped to a board, and lie in bed three months, and use lotions. He lay nearly the time, but found he was no better, and, at a loss what to do, applied to me. I offered him my free hospital, where we have never failed to cure such cases. (See 146½ Bath list.) The other letter is from a medical student, who has neither taken stimulants nor tobacco, and has always been steady. He had a weak stomach, and was otherwise naturally weak in body. The doctors gave him tonics, which caused sickness and headache and constipation, and soon required purgatives. Thus, he says, he has tried all things recommended by surgeons and the professors in the university, who all tell him he has no disease, yet he is suffering and unfit for duty. This is another illustration of the doctors' idea of drugging out disease; when, in fact, the young man's stomach simply wanted vitality, which cannot be given to it by anything the doctors can find in all their pharmacopœias—it wanted natural nourishment, which cannot be had from physic. Scarcely a day passes but we have letters illustrating how poor humanity is brutally treated under the pretence of scientific, orthodox, legal practice. It is really disheartening to contend with educated people for submitting to it, and not using their common sense—it is Naaman the Syrian and the little Israelitish maid over again. If they were asked by us to swallow some potion of the contents of which they were ignorant, or be immersed in cold water, there would be some reason for their hesitation; but their faith in doctors is so strong that they frequently take potions containing the most deadly poisons, and at the same

time are aware that such poisons are known to be used in the practice of these learned doctors; but they suffer for it, and yet go on. Oh, immortal superstition! It is in the nature of mankind. Mankind like to throw the responsibility, as they think, upon others. As to the destruction of life by caustics, internally and externally, in males and females—the latter more especially—it is shocking to think of; for caustic destroys the organic nerves and causes cancer in healthy persons. Thousands of females are victims to caustic. How few use the brains God has given them to guide them! Men with brain of a high order we see led to folly by those of a lower type. Well might the Swedish statesman say to his son, "Behold with how little wisdom the world is governed!" But what is, or can be, the result of being governed by prejudice and ignorance? JOHN SMEDLEY.

Riber Castle, 2nd March, 1868.

SECOND PREFACE.

RIBER LODGE, *January*, 1863.

THE first edition of this work was published June, 1857; and now that a sixth edition is called for, making the twenty-eighth thousand, besides 30,000 of my first Pamphlet, for gratuitous distribution in 1851, I have only to repeat our first convictions, from extensive experience in practice, that the restoration of weak or diseased frames can only be restored by remedies which are calculated to aid the natural vital principle by which we exist. Dr. Anstie, in giving the inaugural address to the students of the Westminster Hospital this session (October, 1862), remarked that Dr. Chambers and others were now bringing forward some new ideas on the nature and cure of disease, and had come to the conclusion that the deficiency of vitality is disease, and that therefore all remedies should be such which directly or indirectly aid the work of nutrition; and to this Dr. Anstie gave his assent, and well and safely might he do so. Certainly when there is not a deficiency of vital power, a person must be well; and when that is deficient, neither digestion nor any function can be properly performed. Any unlearned person will easily understand this, and give unhesitating assent to the truth of it; nor will any one think it a discovery new or old. But when Dr. Anstie, Dr. Chambers, and the rest of the legally-qualified practitioners, go on to teach these same students to use blisters, setons, issues, the lancet, leeches, mercurial ointment, iodine, mercury, aloes, strychnine, preparations of opium, henbane, and other narcotics without number, and the thousand other modes of attempt at *making nature act*, such treatment must appear to any considerate person as totally opposed to their doctrine of using no means to cure disease but which "*directly or indirectly aid the work of nutrition*;" for none of these nostrums can by any chance aid nutrition, but have a very certain contrary effect. By acting upon the simple and true principle of using no means for the cure of disease but which directly or indirectly aid the work of nutrition, several of my bathmen have small establishments on their own account, and, without any medical assistance, undertake cases which have baffled the legal professors, and succeed in curing them. They average ten to twenty patients each, and at some seasons more. Their charges are from 21s. 6d. to 30s. per week, including board, lodging, and baths. So successful are they that every year they find their accommodation insufficient for the increased number of patients. Scores of cases who had been given up, and themselves hopeless of life, are now in health and strength. We now average ten to eleven hundred cases per annum at our Matlock Bank Hydropathic Establishment, and about four hundred at our free hospitals; and few cases come but who have been brought into a bad and often desperate state by these anti-vital remedies; and as to our success in curing, by adopting the principles Dr. Chambers and Dr. Anstie propound, the proof is shown by the continual increasing number who come to our Establishment. We carry out the principle they advocate, and they an entirely opposite course. A physician called upon us the last summer, and said he had come to look over our plans. I replied I was very glad to see him, and that I felt it a great hardship to have such a position in a manner forced upon us, and that I had never any intention of continuing the practice, feeling it [illegible]ion which only

medically educated practitioners should occupy, and I had hoped long before this to have been able to turn over our charge to some of the medical profession; but, notwithstanding our liberal offers, and having had several to try the undertaking, they had given it up, seeing the desperate and apparently hopeless cases of so many of our visitors. I offered to prescribe a little ordinary home treatment for my visitor, when he informed me that he had read my book, and had come purposely to see if he could be relieved of a very painful case of disease of long standing, which all the means at his command had been unable to reach for years. I told him he would certainly soon be cured by our plans, and in a very short time he had no need for his own remedies. The means were so simple that he could not at first believe they would be of use; but acting on Dr. Anstey's, Dr. Chambers', and Sir Charles Bell's theory, that the deficiency of vitality was the cause of the disease, and the raising that power would cure, I prescribed our natural gentle stimulating remedies. The case was clear enough —want of vitality in a particular organ—but all the means he had used or could think of only tended to weaken. This physician counts his receipts by thousands per annum, and is a man of note, and highly esteemed. I advised him never to mention having spoken to me, as he would certainly be denounced. I had afterwards a letter from him, expressing his great gratitude for the benefit he had received, and lamenting he dared not introduce our plans in his practice. If we were practising for pecuniary profit, such statements might be doubted; but the practice, as we carry it on, is a pecuniary loss, and requiring unremitting labour, and the total deprivation of any recreation or absence from home. The great success, however, in seeing human suffering cured or relieved fully satisfies us for all we have to go through. The practice here could be made remunerative by much more moderate charges than the terms at Malvern and elsewhere, now we have made such complete arrangements for carrying on the practice, and I hope yet, for the perpetuity of the work, we shall meet with those who will carry it on when we can do so no longer. Many hundreds will remember their visit to our Establishment, and the friendships they formed there, while life lasts. They have met often to separate for life to various parts of the world, but yet to hold intercourse, now that the postal and telegraph systems bring nearly all the world in communication. We frequently, at our solitary lodge on the summit of Riber Hill, have letters from our late patients from India, Ceylon, Africa, Turkey, Egypt, Spain, France, North and South America, Australia, New Zealand, China, Russia, and even such out-of-the-way places as the Feejee Islands.

CHLOROFORM AND ETHER.

(*From the* Lancet, *August* 17, 1872.)

EVERY week gives us substantial proof of the fatality of chloroform in operative surgery. A certain degree of anxiety, therefore, must always be present in the operator's mind, from which he cannot free himself, even if an equally competent person administers the anæsthetic. If these propositions are not true, then there is no force in what I have here to say. I do not advocate the use of ether, because I come from the city where its employment in surgery was discovered and promulgated, but because I believe that there are others like myself who do not desire to run the risk of killing a patient with chloroform, and who, perhaps, would gladly avail themselves of ether were they rendered as familiar with its administration and harmlessness as we are in America. Let me be clearly understood. I use and advocate ether because it is as effectual as chloroform and not dangerous to life. I should not hesitate to use chloroform, though perhaps not so freely as ether, did the latter not exist. As we have ether, I cannot feel justified in using chloroform, and never have done so. I should not unless forced to; therefore it is that I desire to induce others to

familiarise themselves with the use of ether. I believe that those who now use chloroform exclusively, and who can never do it without danger to the patient, would employ ether did they understand how to do so. I would unhesitatingly say that I think this is largely the reason why ether is not made use of; and I opine there is some indefinable dread of it, caused by the fatality of chloroform, simply because ether is an anæsthetic. Now I desire to here say at once that I believe it is difficult to kill any one with ether, and that death never occurs accidentally while it is being inhaled. The accumulated evidence on this point is sufficient for me at least, as the accumulated evidence of the fatality of chloroform is sufficient to deter me from ever using it unless forced by necessity. That ether is more difficult to take and to administer I recognise and appreciate as well as any one. I do not wish to be harsh with my medical brethren either at home or abroad, but I cannot but think that the disagreeabilities of ether induce some to run the risk of the use of chloroform, which may be fatal—when, who can foretell? I do not propose to enter into any discussion as to the action of ether, or the special methods of using it. I would, however, here say that many of the disagreeabilities of ether—nausea, vomiting, and headache—may be avoided or mitigated by the patients taking no, or but a light, supper the evening previous to the operation, and absolutely *no food whatever* the morning of the operation, which should, if possible, be done not later than nine or ten a.m. Ether, at the worst, is but a profound intoxication, and not unlike a drunken fit. On the other hand, thousands inhale it without trouble, as proved by their anxiety to take it a second time if necessary. A towel rolled into a cone, with a napkin or sponge pushed to the top of the inside, is all we need to pour our ether on, whilst our fingers can mould it over any mouth and nose. Some years ago I often heard in Europe medical gentlemen say, "But there are so many people who cannot take ether." I have yet to see one. The truth is, I believe, that surgeons who use chloroform are afraid of ether, and do not dare to give enough of it at once in the commencement. Now if the patient is warned that the ether will choke him, and told when this occurs to take long breaths to relieve it, and not to struggle and endeavour to push away the sponge, many will go to sleep quietly and without trouble to themselves or the surgeon. I have but one other point to speak of in reference to giving ether. When the patient, whether old or young, struggles, and asks for a respite and fresh air, do not yield. Hold them down by main force if necessary, and at any rate keep the sponge tight over the mouth and nose till they finally take long breaths and then soon go off into ether sleep. Doing this prevents their remembering anything about their struggles. It is absurd to stop the ether and try to reason with adults excited by the anæsthetic, and cruel not to push on quickly with children. This may sound almost puerile to my American brethren, but my personal experience tells me that those who use chloroform have somehow a sort of dread of ether, as if it was to be suddenly fatal, and hence fail to give a patient enough to intoxicate him quickly. This arises from lack of familiarity with its use and administration.

In ophthalmic surgery there are several special reasons for the employment of ether. In the first place, death during any other surgical operation might be allowed to pass without creating undue or severe comment, but no community would let pass without it a death occurring from any anæsthetic during the extraction of cataract, an iredectomy, or the removal of the globe.

CHLORAL.

(*From the* Lancet, *August* 17, 1872.)

If scientific treatment had been at the present day in any way perfected, how were it possible that, within a few years, bromide of potassium, carbolic acid, and chloral, should become in turn universal medicines? If any fact were required

to prove the absence of scientific system in the treatment of disease, it would be the universal administration of chloral: every patient has some bodily uneasiness, or is sleepless, and thus presents symptoms suggesting its use. It is a powerful benumber; but benumbing the sensibilities and paralysing your patient is not curing his complaint. If a man be raving mad, and you knock him down and stun him, he will be quiet, and you may praise highly the dose which you have given him. The practice might thus be developed into a valuable therapeutic agent, and a trained boxer might give blows on the head of different degrees of force according to the strength of the dose ordered by the prescriber. The method would hold rank with the universal administration of chloral, and, in the hands of an expert, might perhaps be more safe.

By way of showing the kind of cases which usually come to us, I give a few specimens out of hundreds similar:—

"Mr. SMEDLEY,

"DEAR SIR,—I am afraid I shall not be able to come to Matlock before Thursday. I have been casting about as to how I should travel, for I have not been able for some time to sit more than a few minutes together, except now and then. The pain is in my hams and in the sinews of my legs, increasing the longer I sit, and becoming very violent. I am afraid that unless I had something to recline upon I should never get safely to Matlock. Perhaps you can tell me whether the railway companies furnish anything to recline upon. Could you recommend me to do anything in your system to relieve me during the four days between this and Thursday, so that I could be some little relieved to enable me to travel. About fifteen months ago I had a strange sensation in my head, a sense of fulness, which increased almost daily, occasioned, as I thoroughly believe, by some painful circumstances, that I will explain when I see you. This sensation in my head continued upwards of three months, when I had an intermission of about a month, when it returned with greater violence, accompanied with a derangement of sight, so that every object was double. I could not read a book, and when I had written a letter I could not read it. I was almost incapacitated from business on account of my memory. At the end of April my medical man ordered me from home. I went to R———, to my sister's, and she thought I ought to have further advice. I went, accordingly, to Birmingham, and saw a physician, who thought I had worms. He gave me an injection and some prescriptions. This injection I made use of; and when the contents of the bowel came away, there was swimming at the top of it a thin skin, which I took to be the inner coating of the bowel, dotted with very small pin points of blood all over. The injection consisted of an infusion of quassia chips and salt. I took his medicine, and from that time I date the eight months of horrible agony which I have endured. I continued under him until the beginning of August, when he ordered me to Scarboro'. When there I could have no motion scarcely without an injection, and lost fifteen entire nights' rest there. I consulted an homœopathic physician, who gave me some little ease. On my return home I was at a loss what to do. My sister and others urged me to come to your place then, but I was loath to go from home, as I was to all appearance in such a precarious state. After two or three weeks I called on Mr. ———, a surgeon here. He was at first at a loss what to do, not knowing whether there was anything forming or some obstruction. At length he prescribed injections of warm linseed oil and warm water; a quart of which I had daily for five days. For five or six weeks I had injections once, twice, and three times a day, giving me considerable relief, but leaving behind it what he called neuralgic rheumatism, and from which I suffered very greatly, trying almost everything that anybody recommended. I had two blisters on my thigh and one on my forehead; these three relieved me in some measure. I had then a large one on my back, just above the anus; the latter was a slight relief, although the source of great pain, which was continued occasionally since. The surgeon

has said for some time that the mischief in the bowel has left a spasm behind it, that now so heavily afflicts me I cannot describe it. The night before last I had an horrible night, and last night my pains were not so bad, but I had no sleep at all both nights. I have not taken any medicine for a fortnight or three weeks, except one drop of tincture of nux vomica at night, and a drop of tincture of sulphur in the morning. My appetite has continued good throughout my whole illness. I do not smoke or take alcoholic drinks. I should think I have lost three or four months of my usual sleep at least during this illness. All the medical men I have been under refer my illness to the first illness, and throughout to the nerves. I have been sounded and examined, and nothing found amiss, except what I have described. When I was at Scarboro' I met my old friend Mr. C——, of your place, who wished me to come to Matlock. I am afraid this long statement will trespass much upon your time. I trust you will excuse it, as I wished you to understand the ins and outs of my case before I came. You may guess my anxiety, when I say that I have eight children dependent upon me entirely.

"I am, dear Sir, yours truly,

"T. N.

This patient came, and was of course confined to his bed for some weeks, as the weather was severe; and the terrible spasms in the bowels and rectum frequently returning, at first caused such prostration that to an ordinary observer life would seem impossible. I, however, felt much confidence that he would get well, and was not mistaken. He recovered perfectly; and when my bathman last met him at the Great Exhibition in London, he said he was a wonder to himself.

Now let the reader remark this patient's nervous system was worn down by a good deal of mental anxiety, and consequently the vital powers of the digestive organs and of the whole body was lowered; and mark the effect of the usual anti-vital remedies prescribed by the physicians and surgeons, and the terrible suffering caused by still farther draining the little vitality left. Soon as the patient came under our treatment, we applied no means but such as would raise the vital power; and he soon got some relief, and gradually got well.

Thousands are martyred and sent to the grave by purging, blistering, &c. &c. A striking instance of this occurred a few months since. A man was taken with severe colic pains in his stomach and bowels. He sent for a doctor, whose only idea, according to the legalised practice, was to get a passage through the man, and gave strong doses of castor-oil and brandy. With difficulty a passage was got; but in a few hours the excruciating pain returned, and all attempts to get another passage failed. The man died in great agony. Now let the reader see how clearly the result was owing to the anti-vital remedies. The colic pains, in the first instance, was the consequence of want of vitality, and, according to Dr. Anstey's sound theory, the remedies should have been such which would have raised that vital power; but castor-oil could only make the bowels act by subduing the vital nervous power of the stomach and bowels to hold their contents, and by that means discharging the contents, but the remainder of life went out at the same time. The vitality was so extinguishing that when an attempt was made to force the bowels again to act, violent spasms came on, and the man died in agony. I had a similar case, but a weaker, less temperate man; and the seizure was far worse. It took four men to hold him while we fomented his bowels and packed his legs in hot mustard cloths, using our No. 144, 153½, also 47. Soon as we could keep him quieter, the result was, in a few hours all the pain had ceased, the bowels acted naturally, and by keeping on the body bandage 165, with flannel wrapper over it for a few days, night and day, the man was able to get to his work. He was, in fact, well the day after the attack. We used such remedies as Dr. Anstey, Dr. Chambers, and others recommend but do not practise.

(From a patient formerly restored to health at our Institution.)

"Go on, go on, no moments wait, to help the right;
Be strong in faith, and emulate the virtues of the good and great
With all thy might—Go on.

"Go on, go on. The skies may lower, the storm may burst;
Unshaken in the trying hour, good purposes shall give thee power
To brave the worst—Go on.

"Go on, go on. Thou canst not tell thy mission here;
Whate'er thou dost, labour well, nor let a doubt within thee dwell,
Or coward fear—Go on.

"Go on, go on. Oh! doubt it never, this strife with wrong
Is fated not to last for ever; but if we boldly make endeavour,
Will cease ere long—Go on.

"Go on, go on. Thy onward way leads up to light;
The morning now begins to grey, anon the cheering beams of day
Shall chase the night—Go on."

LONGFELLOW.

Two severe cases have just occurred, and both soon recovered by the simple means stated as follows, without any assistance whatever from the legal doctor. In the case of the man who had the accident with the lead, he had formerly a slight accident of the same kind. Lotions were applied, which the man said drove him almost mad. He was laid aside from work, and it was months before he recovered.

His father-in-law had an accident somewhat similar. Lotions, blisters, &c., were used, drawing away the vitality instead of aiding it, and he lost the sight of one eye.

Case of a man burnt with molten lead.—The lead went into both eyes, over face, one hand and wrist, and caused excruciating pain. 58 was immediately given by means of some boiling water in a vessel, with a narrow board put across the top of it for the affected hand to rest upon, and so have the benefit of the steam; then a thick woollen wrapper thrown over the man's head and vessel altogether, so as to keep in the steam, every five minutes just lifting the wrapper up, and gently putting into the vessel a few red hot cakes out of the fire nicely kept up the steam. This process soon eased the pain, by setting eyes, nose, and mouth, watering well, which drew away the inflammation gradually, as well as the pain. After the above process had been continued nearly an hour, 220 was applied to each affected part, and at night the steaming and poultices were all repeated; next morning he was so much better that 151 was all that was required, and he was able to attend partially to his work, and the following day was quite restored, and only sponged the eyes with milk and water.

Case of severe dyspepsia. Liver and brain congested from a residence in India thirteen years, which quite incapacitated him for any business, and he had given up all hopes of regaining health.

"I have delayed writing to tell you how I was getting on till I saw if my cure should be permanent. So far I am happy to say that I keep quite well, indeed better than when I left you, and by the end of summer I shall be better still. I still keep up a little of the treatment, and find it keeps me in perfect health. Your book is now my hand-book of health, and a very safe one I find it.

"Now I am on my way north, and I fear I shall have some difficulty in getting what I want in the way of baths; in London I found none. I find I can get any sort of wine from any part of the world, but a little clear cold water in a sitz bath is a difficulty, strange to say; and the further north I go I fear the difficulty will increase. Would you, therefore, put up for me a sitz bath and blanket, a lamp and india-rubber petticoat, or sort of cloak for sweating, a chest compress, and one of each of the other sorts for the stomach, a sheet of india-rubber, and anything else that you think I shall require? You will be good enough to forward these at your earliest convenience, as I shall be in Scotland next week. If you can spare time to write any advice, I shall be glad to receive and treasure it.

"The *Africa* has arrived at Queenstown, and brings most exciting accounts, which you will learn from the papers before you get this letter. Your former predictions are coming pretty true. I wish I had bought cotton when you advised it; it is pretty clear that we must not look for cotton from the States for long, if ever; and India cannot give us what we want."

The following was a case of severe nervous prostration, from overstraining the mental powers. Liver, stomach, and bowels greatly deranged. All the usual doctors' remedies had been tried, to compel the organs to act, and to give power to the brain, but the more the doctors tried to *make* them act, the more torpid they became, as a natural consequence of the use of calomel, blisters, &c. &c., until, in despair, he came to us, and the following letter is the testimony he gives us to our comforting treatment. His brother's case was one of severe chronic inflammation of the bowels of long standing, and every means the doctors had used only helped to aggravate the disease. He had long had frequent discharge from the bowels of blood and mucous, but by our simple plans he got well. His case was considered quite hopeless of cure before he came to us:—

"My Dear Sir,—Since leaving your establishment in June last, after remaining there six or seven weeks under treatment, I consider it right to address you, and do so with the greater confidence, a considerable time having elapsed since my return home. I went to you early in May, suffering under severe nervous depression, of long standing (the effect of sorrow, and too much application to business). For over three years I seldom had *natural* sleep, and my spirits and nervous system were constantly depressed and unstrung. Previous to my leaving, you said it would take me twelve months ere I became quite strong, and I believe (D.V.) your words are proving correct, for I am month by month getting better in all respects. I look back to the time spent with you as one of the happiest of my life, and truly feel that I left Matlock a wiser and healthier man. Far as I can I practice your system at home—*i.e.*, far as *sitz* baths and general bathing are concerned. The sitz, five or six minutes, a little over tepid; then run down to nearly cold one minute. I find it most refreshing, and use it constantly (almost daily). I have, since with you, become a water drinker, and *never* since used tobacco in any way. I used to smoke moderately, and assure you I found it *very hard indeed* to break myself of its indulgence—even to this day. If in society where smoking is going on, I feel an *all* but *un*controllable desire to resume, but have been firm so far. *Your* system has my most ardent wishes for an increase in number of its disciples; and in my own small circle I do all I can to co-operate in adding thereto. If all be well with me, and circumstances permit, I hope to go to you during the summer for a short time.

"My brother, who went with, and remained after, me, had no return of his complaint (dysentery, contracted in the East Indies) since he came from you quite sound and well. I may truly say *you were the means of saving his life.* He has gone out to China, and, before leaving me, promised to write you when he got to Shanghai. I trust that you and Mrs. Smedley continue well. Will you make my compliments to her, and accept the warm regards of ——."

I have since received a letter from him from China, saying his health was completely established at our establishment, and has never failed since.

Case of dyspepsia and skin disease, which had for many years defied all the doctors' remedies:—

"It is seven weeks since I left your establishment, and I would have written sooner had it not been that I wished to have something definite to say to you respecting the state of my health. You are aware that I left as soon as I was

able to bear the fatigue of travelling home; and, notwithstanding this, I have only been absent from business two days since my return. I am sure this will be gratifying news to you, as I can assure you the results are to myself. I am fully satisfied in my own mind that but for the treatment I have undergone at your place, I should have been totally unfit for any business; and, as I have before told you, I had no hope of cure from allopathic treatment, having given that a fair trial. I am only sorry I did not find my way to you some years ago; but better late than never.

"Since I came home I have been gradually getting stronger. Every morning I take (on rising) No. 95, with 204 occasionally; at night, No. 94. I have had 51 once; 59 twice; 35½ three times; and sometimes 99 since I came home. Taking into consideration the bad state I was in when I applied to you, and my low state of vitality generally, I think I have every reason to be fully satisfied with my present state, and hope, by care and perseverance, to be fully restored to health again.

"I will conclude this note by expressing my deep sense of gratitude to you, as a means, under God's blessing, of restoring me to better health than I have had for some years, and hope that God will long spare you and Mrs. S., and enable you to continue your efforts in ministering relief, and restoring to health many of our fellow-creatures, who, like myself, have failed in obtaining it elsewhere."

"In duty bound I ought have written to you before this, to tell you how I was getting on; however, I may mention as the reason my desire to let some little time pass over, by which I might really see how my health might turn. I do believe that it is your pleasure at all times to hear of the welfare of those who may have been at your establishment at Matlock; and, as one of those, it is my own pleasure to write to you, associated as the mind of my wife and my own are at the present moment with feelings of gratitude to God, above all things else, because without His blessing all means are vain.

"I am glad to inform you that my health has steadily continued to improve ever since our return home, and I am as firmly convinced that the treatment I had from you was a real benefit to me as that I exist, or any other person whom you ever had under treatment. I certainly occasionally experience irregularity of the bowels, but the bandage I find for a day or two to be quite enough in meeting that. In connection with this I also found the use of stewed fruit very useful; and, I am happy to say that other than this mode of proceeding, neither my wife or myself have had occasion for a single grain of medicine. I attend to business daily, taking care to observe those rules which you lay down in the good and valuable book which you so kindly gave to me when at Matlock."

(*From a Clergyman.*)

"After having a little breathing time, I feel myself bound by every consideration to return you and Mrs. Smedley my most sincere and heartfelt thanks for the kind interest you manifested on behalf of myself and my dear wife, at a time and in circumstances when we peculiarly needed the assistance and sympathy of friends. The old proverb says truly, that 'a friend in need is a friend indeed.' Such friends we have found in you both, when on the point of being crushed by affliction and other adverse circumstances.

"The treatment, under the guidance of yourself and Mrs. Smedley, has been to us both like life from the dead. My dear wife, as well as myself, feel quite renewed, and we hope permanently restored to health. I waited four days before writing, to see how we would feel after coming home, and I now rejoice to tell you that we both *continue* strong and healthy. Now and then I feel this week a little of the old headache, but a cold sitz and cold foot bath carries it soon away. Neither of us have have felt so strong and comfortable for *many many* months

as we have felt since our return from Matlock Bank. Both of us carry on the treatment at home, as regular and as near as we can to the directions we received.

"When we were both going to Matlock Bank the first time we felt very low and disheartened, having been both of us so long under the doctors' hands, and received so little benefit from them, that we were very near giving up all in despair.

"Now, my dear sir, whatever circumstances it may please Providence to place me in henceforth, you may rest assured that your kindness, and that of Mrs. Smedley, will never be effaced from our hearts, and we shall ever retain a most grateful recollection of your willing service to us in the hour of need My dear wife begs to join me in sending her grateful acknowledgements to you both. Our sincere prayer is, and shall be, for the Lord to bless and reward you both most abundantly."

"DEAR SIR,—I beg to return you my heartfelt thanks for your great kindness in permitting me to sojourn for a time, and undergo hydropathic treatment, in your free hospital at Lea Mills. It is rather more than three years since I was struck down with rheumatism, and for a time it appeared extremely doubtful whether I should recover or not. I was brought wretchedly low by allopathic treatment, and was reduced as near to a skeleton as I think it possible for a living man to be brought. I then tried homœopathy, which failed to drive the complaint out of my system, although I derived very great benefit from the diet prescribed. Weary of medicine and treatment, I tried change of air, and experienced much advantage from it; but still I was liable to severe attacks of my complaint, and have been laid aside in wet and cold weather for a week or two, and sometimes for a month. At length I made application to you, and I cannot sufficiently express my gratitude to the Almighty, and to you, sir, for the benefit which I have derived. After so long and dreary a season of prostration, the possession of health and strength is delightful; and it is my firm resolve to use these regiven blessings to the glory of Him whose you are, and whom you serve.

"I have allowed a week or two to elapse after my return home before writing to you, as the report of my renewed health would then be more satisfactory. My appetite is good, body vigorous, and general health excellent. Occasionally I feel rheumatic pain in my shoulders, more especially the left one; but I suppose that I shall gradually get rid of this. On the day I left your hospital I walked to Sheffield (twenty-eight miles), and was pleased to find that I could thus accomplish the journey with very little fatigue. My little ones have had the measles since I came home, and, by attending to the directions contained in Mrs. Smedley's Manual, they have been brought nicely through them, without a spoonful of medicine.

"With grateful thanks to you and Mrs. S., and praying that you both may long be spared in the enjoyment of every needful blessing."

Case of thoroughly deranged health, which all the allopathic remedies had only aggravated:—

"DEAR SIR,—I left England ten days after I left Matlock Bank. Had a pleasant passage of eleven days to U. S. My health is now quite restored, thanks to the good Shepherd, and you, His honoured instrument. I shall always remember my visit to Matlock Bank with gratitude. I called at the Waterloo Hotel, Liverpool, for the book you kindly offered to send there for me, but it had not arrived. We would be glad, if you could make it convenient to visit this part of the world, and bring Mrs. Smedley with you, and stop with us a month or so. You will see many new things, and crossing the Atlantic is a good amusement. If you find time, let me know how you are, and how your concerns prosper. Remember me to my Matlock friends, and accept for yourself my best wishes."

"Dear Sir,—I am much obliged for your kind and prompt attention to my note of the 9th instant, and I assure you I shall be glad to have the sheets.

"You taught me a good deal during my short residence in your establishment, and I have since derived considerable benefit from the practical application of what I learned, and am continuing to enjoy my cold sponge bath and sniffing bath every morning, and occasionally my bandages; in fact, by these means, and attention to diet, clothing, and regular living, with God's blessing, I keep in very tolerable health, and am able to fill my post in business and be a useful member of the community, although at one time I despaired of ever recovering from my affliction or chronic affection of the larynx."

The following case was brought to my Establishment in a state of great nervous excitement, from severe dyspepsia, and the usual aggravation by purgatives, &c. He had a short time previously twice attempted suicide. He left cured of his disease:—

"I have great pleasure in presenting my sincere and heartfelt gratitude to you for the extreme kindness shown to me during my stay at Matlock Bank, and think that I shall ever be indebted to you for it.

"I feel quite assured from the deep interest you took in my welfare, that you will be glad to know that my health is very much improving, and that I am experiencing the truthfulness of your kind remarks to me from time to time. They were as follows: that I should in future life, in all probability, be better in health than I had been for years past. I may say that such is the case, and that, in consequence of your very excellent treatment under the hydropathic system, and the blessing of God resting thereon, I feel there is a basis for future health laid that I have not felt for years past; and I do hope that you will accept of my most sincere thanks, which I feel in duty bound to present to you.

"I have many pleasing recollections of your instructive and very telling remarks at various times; of the very delightful influences I experienced at the reading of the sacred Scriptures; and the gathering of the family circle night and morning, which, I doubt not, will have their effect for good in the long round of eternity, which I pray from my heart may be the result; and that in the eternal world of joy you may receive the reward of a crown of glory that fadeth not away, and find many—which I doubt not you will—of those who, through your instrumentality, have been led to a saving knowledge of the truth as it is in Jesus."

"On leaving your Establishment, Matlock Bank, about the close of December last, I believe I promised to write you to say how I was going on.

"I am persuaded that you will agree with me in admitting that, for all blessings received and enjoyed, our *first thanks* are due to the 'Father of Light,' from whom cometh down 'every good gift and every perfect gift.' But, next to this, I feel that it becomes me to say that I have inexpressible cause to be thankful that I was influenced to spend six weeks at your Hydropathic Home. For about two years previous to that visit, this life, both within and without me, was one unrelieved, distressing, miserable blank; to me devoid of either comfort, hope, or joy. But, blessed be God, how different—gloriously different—when, at the close of six weeks, I left Matlock Bank! My residence there was just the thing for my case.

"At Matlock, in connection with the 'water treatment,' I met with that mental repose, cheerful society, exercise, diversion of the mind, and kind, encouraging treatment from others which I so much needed; and, by the blessing of God on the means used, I came home, as they here told me, a *new man*. My mental and nervous vigour seems to have been quite renewed, and the entire tone and action of the system appears to be better than it has been for the last fifteen or twenty years. Without speaking in the spirit of vain boasting, I believe I may say, in truth, that I can both study and preach with greater facility and ease than I ever could in my life before, and yet I had given all up for lost. How good the Lord is!

"Since my arrival home I have continued especially the head-baths, with the body bandages, with much rubbing of cold water behind the ears. It is great cause

of further thankfulness that, within the last two months, my hearing, which you will remember, was very defective, *has greatly improved*. I can now without particular effort, hear sounds and conversations which I have been deprived of for some years. I continue to use the baths; and my general health and hearing seem still to keep improving. Well, while we are thankful for human means, we must *give God all praise and glory*.

"Permit me, before I close, to express my satisfaction, and pleasure, and profit in the family and religious services which are held in your Establishment. They seem specially valuable and *dear to me*—no doubt, because it was in connection with them that I began to feel relief from that 'horror of great spiritual darkness' that had so long and so miserably oppressed me. It was then that, in singing and prayer, and reading the holy Word of God, I began to feel the spring and return of those inward spiritual consolations and joys that convinced me God had not forsaken me, and that life was still an invaluable blessing, and particularly so as a preparatory course for a higher and a better state.

"I was pleased with the generally apparent attention and sincere interest which the patients took in the worship of God."

(*From an English M.D.*)

"I have since my visit to your Establishment (allow me to thank you for your hospitable reception) read again with increased attention the exposition of your views in your book. Your view is, no doubt, as sound as it is simple. For years I have employed Hydropathic adjuncts in curing, but now I see that one can rely alone on the means employed by you. I regret an engagement compelled me to shorten my stay, but hope to come again some time. Since my return I have obtained a copy of Mrs. Smedley's little book, and perused it with enlightenment as to the applicability of your means in maladies which are very difficult to treat by medicines; and hence the multitudinous chemical and mechanical local methods, more injurious than useful. If I were younger I would convert a paved area behind my house (thirty feet square) into a bath-house. Alas! that, when young, prejudice should have prevented my attention from dwelling upon other systems than that to which I was educated."

"I feel constrained to tender my gratitude for benefits derived from the knowledge you have laboured so nobly to diffuse. You may remember my writing some time ago concerning my husband's knee. Some time prior to my writing we discovered a large soft swelling on the joint; we went immediately to a doctor, who gave a dark, almost black, fluid with which to paint the knee. My husband jocularly remarked, 'This is very like iodine.' The doctor said, 'Well, it is iodine, made expressly for cases like yours.' We used that bottle, and nine more; afterwards we painted it four or five times some days, which reduced the swelling, but as soon as we ceased painting it the swelling returned, and the bone was beginning to feel very sore. I went myself to the doctor, and expressed my fear that the knee was not making much progress. He said, 'Well, that is the best remedy I know,' and referred me to a man in the neighbourhood that he had cured of a similar knee by the same means; but I saw the same man the other day walking very lame, which, I suspect, arises from the cured knee. We are almost in despair. I have had a volume of your work on 'Hydropathy' lent me by a friend, and reading it induced me to write you. You advised my husband to come to Matlock, but circumstances were unfavourable to his coming then, so we began to try home treatment; we steamed the parts very frequently, and placed the whole of the leg in wet and dry swan's-down for several days, we then applied wet swan's-down bandages, with a thickness of oil-silk, and several of flannel; this soon brought a burning sensation, which we regarded as favourable. We persevered several weeks, when red pimples began to appear, and in a few days it was one mass of white pimples, and about the colour of a beefsteak. Our

friends were sure we were doing wrong, and advised us to go to the celebrated Oldfield Lane doctor at Manchester, but from your work we were sure the knee was doing well; and the result has been most gratifying, as the pimples and redness disappeared, and the knee is as sound as ever, without any appearance of swelling again. During the allopathic treatment my husband was off work six or seven weeks, but worked most of time with water dressing. We both send our heartfelt thanks, and also for your valuable books, and remain yours most gratefully. ——"

[How strange doctors should continue this old, anti-vital treatment, when it is utterly impossible a cure can be made by such practice! I have now a case—gentleman, age forty-five, sprained knee. Surgeon applied iodine, then blisters, but swelling was not only not reduced, but increased, from weakening the lymphatic absorbents; then an issue was tried, with no better result, the knee began to give way, that he could not walk without pain. He then came to me, and I told him cure was certain and easy by our means; and so it was. We never fail to get such cases sound, and save amputation, which would inevitably have been the case in this instance. The Rev. — Passnett, similar case. Drs. Paget and Ferguson had a consultation, and decided on amputation above the knee. He then came to me, and got perfectly sound without difficulty. We have saved a great number from amputation.—S. J. S.]

(*This Case got quite well without a mark.*)

"Many thanks for your kind advice respecting treatment of small-pox. I am thankful to say my wife is recovering nicely with the treatment in Mrs. Smedley's book; I don't think she will have a mark on her. She was downstairs on Sunday, also to-day. Please tell Mr. Smedley, should you see him, she is getting on beautiful. I will write him in a few days."

"Trusting to the kind assurance you gave of your willingness to give advice in any future time of need, I write at Mrs. ——'s request to ask what you would advise in her case. It is now just a month since she sickened with small-pox. No doctor was called in, but with the assistance of Mr. Smedley's book her husband and sister treated her very successfully, thank God! On the thirteenth day she got up, but little weakened by the complaint, without having suffered any irritation or soreness of the skin."

"I should be greatly obliged for your opinion and advice on the following case of paralysis—a gentleman neighbour, who I fear has been too free in living, with an extensive business, and very industrious habits. He would come to the Establishment, but is quite unable to do so. Members of his family have been, and he and they have the utmost confidence in the Hydropathic principle. Age, sixty-seven years; weight, fifteen stone; height, five feet seven inches; complexion, ruddy; time of attack, five a.m., December 20, 1871. *Now*, pulse, slow; tongue, clean; sleep, good; appetite, good; bowels, regular by pills. The right side is paralysed; the whole—arm, leg, and head. Speech was quite taken, but is now partially restored. I write by the family's wish, to whom I said I believed the case perfectly curable by the Hydropathic treatment. I suggested that he came to the Establishment, or, not being able, to have a bathman. Not being able, they thought, subject to your opinion, it would be better to ask the favour of a bathman, and your further advice would then be kindly solicited. The gentleman is a real hardy, strong man, and I think would be a good case to manage and cure. His doctor says he can do him no further good." (*We have brought many such cases to enjoy a comfortable state of health, and prolonged life many years.*)

"It is with feelings of very great pleasure that I write to thank you for instructing Mr. Brown to send me a copy of your latest edition on 'Hydropathy,'

also one of your highly esteemed wife's Manuals; and I can assure you they will be treasured as heirlooms in my family as long as we live. I have taken a very deep interest in this question now for about three years, persuading many to adopt its principles, and read a good deal upon the subject. I know it will gladden your heart when I tell you I have a family of seven children, and have never had a doctor in my house since I brought the light from your Establishment; and we have had all the diseases incident to humanity, but get through them infinitely better without the doctors than with them."

"I have much pleasure in informing you that I was appointed agent to this bank here in July last. I was taken quite suddenly and by surprise. My recent absence and illness had led me to give up all hope of promotion. I feel that I could not possibly have undertaken such a charge, or even have had it offered to me, had it not been for my providential visit to you. When I visited you I had begun to feel that my time was short, and that health was a thing of the past with me, but, by God's blessing and your ability and kindness, my health gradually got restored, and I am again able to attend to my duties with more energy and with less fatigue than for years past. I have not taken a single drop of medicine, neither do I intend to do. I have simply followed your prescription. I cannot thank you as I could wish for what you have done for me."

(*Gentleman, aged sixty, prostrated to the last degree; sleepless, sickness, heart scarcely beating.*)

As the patient is unable to be moved much, or to bear much exertion, the following plan can be adopted easily and safely, and always with relief, and generally, if taken in time, will cure:—115¾ *without* pads, and made *mostly* with linseed—137 and 130 during the application; 157, 50 with hot water *bag*, not the tin can, putting a little mustard in the cloth; 152, made with gruel and glycerine, given every other day. 214 should be kept on legs and arms, and when not in treatment as above keep a 220, slightly sprinkled with chillies, on the stomach and nape of neck; and use 224, but with vinegar and water to skull cap. The 214 for legs may be varied by linseed, 220's on legs and spongio gaiters over, or spongio gaiters alone. Also, in renewing any of above applications, as much rubbing as can be borne comfortably with hand and neat's-foot oil or chillie paste to limbs, and especially all over the bowels and round the large colon, would give great ease, and be very useful in expelling wind and fæces.

Diet must be very carefully given as regards small quantities, but very frequently, and nothing in the way of stimulants, as they would of themselves create the very difficulties with which nature is contending. Revalenta, made according to recipe in this book, and sponge rusks, small saline draughts made as follows: Soda enough to cover a sixpence, a very small quantity of sugar, and a little pinch of chillies. Dissolve these in about a wineglass-ful of cold water in a tumbler, and then have another glass with *rather* a larger quantity of citric acid well dissolved, and mix them just as you take them. Camphor in lumps put in a bottle of cold water and left, tastes the water, keep adding cold water as used—the same camphor will do it—is a very useful drink, in small quantities, for this disease. Milk and cream, and everything of a fatty character, should be avoided, as the liver is always much deranged, and therefore would cause spasms; no sugar, salt, or any condiments. The point to aim at is to quiet the stomach, and draw heat to the surface of the stomach, the extremities and arms. Keep the stomach and bowels warm by the 220, 169¼, and other bandages named, according to circumstances. Any brandy, or other spirits or opiates, or medicine, simple destruction. This state of disease is brought on by improper living, overwork of brain, and then doctors come in and proclaim heart disease, when, in fact, it is stomach disease, which causes weak action of the heart. I

have had many cases of this kind quite given up by medical men get well, or so far restored as to live in comfort, with care. I have had several successful cases, who for many weeks took nothing but revalenta and rusk biscuits, which will not only sustain life, but increase vitality.

(*We have restored hundreds of such cases as the following to health without difficulty, and taught them how to keep their health.*)

"I am suffering from indigestion, caused (the doctors say) by overwork of the brain. I have been off work nine weeks, and seen several medical men, who have treated me in various ways, until I am nearly done for. I can yet walk about, but have got into such a nervous state by anxiety that I cannot sleep; in fact, I have had no natural sleep for eight weeks. A person who had derived benefit from your treatment recommended me to go. I now write asking if you will take me; I do not wish to lose a day, as I am getting worse and more nervous; will you kindly write me, per return, as I can then start by the first train on Monday. I feel in my own mind that your treatment is the only one that will save me. I have no organic disease whatever. Do you think you can get me to sleep, as I am afraid of going mad?"

(*Doctors' Victim.*)

"I have to thank you for the pamphlet just to hand. Will you send me terms, &c., and the best means of reaching your Establishment *viâ* London, as I am disposed to give the treatment a fair trial. Until quite recently I have been under the late Dr. Tanner, of Henrietta Street, London. He died about two months ago. Under his advice, I went to America in 1863 for two months. Since that time nervous indigestion, sleeplessness, and despondency have become my masters. My spirits get very bad indeed. In 1869, Dr. Tanner urged me to leave business at any sacrifice, and go and reside in Jersey for a time. I did so, at a tremendous pecuniary cost, and about a year ago came to reside in this place—better, certainly, but am now taking medicine from the local doctor for indigestion, which seems to be simply want of tone or power; and the most trifling matter worries me in a way to make one ashamed and disgusted with oneself. The doctor says it is dyspepsia. Doubtless, in my case, it is the result of overwork in London life, that brought on piles and then an operation, after which I went back to work and very long days too soon; and I have since 1850 never been well for many days together. My age is fifty-one." (*Our treatment we have found always successful in such cases.*)

(*Came and got well.*)

"Having read your book on 'Hydropathy,' I am convinced that it is the proper mode of treatment. I have been in a bad state of health for twelve years; have been ruined by the doctors. I have been troubled with abscesses, boils, and scurvy. The result has been, the doctors have lanced me and used various other means, which have always left me worse than they found me. I have been compelled by them to apply all kinds of abominable ointments, which have almost driven me mad. On account of my being laid up so much, and my business having to be left to other people, it has been ruined, and I am penniless. Now, sir, it has occurred to me if you would only admit me to your Free Hospital and establish my health I should be placed in a fair position to earn a living. I could, with some difficulty, raise money to take me to Matlock and back, and that is all. But I do not know whether your Hospital is entirely free or not: if you will kindly inform me, and, further, if you will admit me, I shall be for ever obliged to you. I do not know that I can say anything more, only that I would not make an application for gratuitous relief, only stern necessity compels me to do so."

(*Anti-Vital Treatment.*)

"I have been troubled with a swelling up the left side of my face for about twelve months. I have been to two different doctors, both supposed to be clever in their business; but neither has done me any good. I was under the first better than three months. He gave me cod-liver oil, and about Christmas it bursted under the jaw. Seeing he did me no good, and the swelling enlarged, I left him and went to the other. He painted it, which caused the skin to burn off several times, and gave me extreme pain; lanced me under the ear and on the shoulder, which made me as I could not follow my employment for several weeks properly, having to stay at home about four days out of the six. He gave me cod-liver oil and some medicine; but, seeing he did me no good, but worse, I have not been to him for about one month. They both tell me that it is the swelling of the glands, caused by colds partly and a weak constitution; but still I feel strong of myself, considering I have four runnings of matter from me, which make me feel weak. The work I follow is in a warehouse of a cotton-spinning company, and is rather heavy work, especially for the shoulders; have mostly to carry on them; and I was informed by a friend of mine to write you, to see if you could do me any good, as I am sure the persons whom I have been under have not treated me at all right, and I should feel it a great pleasure to have a reply from you on the subject. Also state your very lowest terms, as our folks are not very well off, and my wages are a great support to them, and I feel I should like to have my proper health back, if it is God's will, on their account, as they are getting into years; both now have passed sixty years of age. I am nineteen years of age. (GOT WELL.)

(*This Case got well.*)

"A friend of mine, a Dissenting minister residing here, has had a severe attack of sciatica some two or three months ago. By applying pads to his hip and leg, I eased the pain, and brought it down gradually to the foot. He now appears in perfect health with that exception. His foot hangs down, as he has no power over the ankle-joint to raise it; it heats very much, and the pain shoots violently into the great toe, which he allays by putting it into tepid water and covering it afterwards with a compress; and when that dries the pain returns. When it does not heat, it becomes benumbed. I have put it in mustard and water, and I have also poulticed it with linseed; but it appears to me to have made no progress towards recovery in the last fortnight. The patient is rather a corpulent man, but of delicate stomach and abstemious habits. He is also periodically subject to bleeding piles; these burst during the late attack, and bled for more than a week. I have given him nothing but local treatment for the leg and foot."

(*Came and got well.*)

"For the past nine months I have been suffering from nervous affection of the brain and irritation of the spine and want of natural sleep. The whole time I have been obliged to take morphia and chloral hydrate in order to procure sleep, until I feel it is killing me outright. Will you kindly advise me by return whether you think I could get any relief by coming to the Bath?"

"Duty called me away from the Bank a day earlier than I had intended, and I was thereby deprived of the pleasure of paying my respects to you previous to my departure. I therefore avail myself of the earliest opportunity to acknowledge the benefits derived from your kind advice and treatment, by which I have been perfectly cured of neuralgia, from which I had been a severe sufferer for about ten years. Sincerely trusting that the Divine blessing may continue to attend your ministrations, to the temporal and eternal welfare of those who may come under your cognisance."

"As an old patient, cured by you, I trespass on your liberality to ask your advice how to treat the enclosed case, which completely puzzles me. Of course I only do it gratis, to serve a good neighbour of mine; and it is astonishing how soon we eased the dreadful pain my friend was suffering from. Mr. B—— (who was with me at Matlock) and myself continue in capital health, thanks to your labours for us both."

"I desire to return you my sincere thanks for your kindness to me during my stay at your Free Hospital. The benefit I derived is such that I am now at work, and I trust you will accept my gratitude."

(*Came to our Free Hospital, and got well.*)

"Not strong, but good health generally until this attack. Occupation in tailor's shop as foreman, light work. Having had your work on 'Hydropathy' recommended to me by a brother, who has been under treatment at Southport, I purchased a copy, and am now wearing the abdominal compress day and night; and I beg to ask if you could advise any other treatment which I could practice at home, as I should risk my situation by leaving it for any length of time, which, having a wife and five children to support, I could not afford to do."

(*From a Clergyman.*)

"I have just returned home, and found the parcel containing two copies of your Manual, and several bandages kindly sent to me. I am much obliged to you for them; and believe you have few converts to the building-up theory of Hydropathy more thoroughly convinced of its soundness than myself. For several years I have acted upon it. I always tell my friends that if I had the misfortune to be seriously ill, or if my children were seriously ill, I should send them off at once, if it were practicable, to Matlock, or send to you for assistance. But the system seems so efficacious that I have no such necessity. The united ages of my two children amount to thirteen and a half, and two healthier children are seldom seen, but not one grain or drop of medicine has ever been given them —once, indeed, in my absence for a few days, a few grains of antimony were administered, to my disgust, as well as theirs—but with that exception, no drug has been swallowed in my house by myself, children, or servants, for three years. For this, under God, I am indebted to you, and it is no small blessing."

(*This Case got well; it was a simple Sore Throat case, brought to choking by the doctors' treatment.*)

"We received your kind note this afternoon, and thank you much for your kind reply. I am very pleased to say my dear husband is getting better now. His mouth is gradually opening since Tuesday, when an abscess broke in his throat, and another on the jaw, internally. He is still very weak, as he has suffered much pain. I have carried on the treatment according to Mrs. Smedley's and your directions, received on the 11th—linseed 220, 135 and 50, 141 and 135; also steaming, and tepid vinegar and water sponging. If you think anything more than general home treatment is necessary now, will you kindly send me a line, and I will do my best to follow your directions and advice. My health has so much improved that I am quite surprised at my own strength."

(*The following Case came, and was restored to perfect health.*)

"I was shown your book on 'Practical Hydropathy,' in Natal, South Africa, where I have lived for twenty-five years, and I should like to visit your Institution for a time, and submit myself to treatment, if you think it would be beneficial in my case, which is one of nervous prostration. About a year ago I was attacked with a low form of inflammation in both ears, which has resulted in considerable impairment of the hearing in one ear, and in a lesser degree of the other. This

I think is to be attributed to cold bathing whilst in a delicate condition of health; and I have always found since that cold bathing, though beneficial to the general health, has injuriously affected the ears. I shall be glad to hear from you, and have your opinion as to whether the hydropathic treatment can be adopted in my case without fearing the result I have mentioned."

"DEAR SIR,—Your kindness and the interest you have taken in my poor wife makes it as much a pleasure as a duty to inform you that we arrived safely in London, and that already the treatment and milder air combined seems to have made her much better; with God's blessing, I trust this will continue. I cannot but trust that Mrs. Smedley's health will soon improve, and that you yourself will derive benefit from your anticipated change. It will be an earnest prayer of mine that your valuable lives may be spared for years to come, to add fresh triumphs of lasting good to those you already have the satisfaction of looking back upon. Thanking you again heartily for your personal kindness to me."

(*The following Case shows the utter ignorance of the legal profession to administer to simple functionary disorder where there was no disease. Instruction in diet, clothing, and habits of life and moral restraint would have prevented all this misery. With our natural treatment he got well.*)

"Being one of the suffering sons of humanity, and having tried many of the ordinary cures for my complaints without any real benefit, my friends and myself had made up our minds to try —— Hydropathic Establishment. A friend called one day lately, and in the course of our conversation he asked if I had seen Mr. Smedley's work on 'Hydropathy;' I said I had seen it advertised in the local papers, but had not read it. He told me he had the loan of one, and would let me see it for a day or two. I soon found it to be a very interesting book to me, and procured one for myself, and I now ask you to be kind enough to send one of your prospectuses. I hope, sir, you will not think me too intrusive in thus addressing you without first making a sufficient apology, and had I not read and fully believed the preface to your valuable work, I daresay I should not have ventured to write you at all; but I hope you will bear with me for a little, while I try to state, in a few words, what I fancy the nature of my complaint or disease is. I am thirty-four years of age; at the age of sixteen went to serve an apprenticeship to the drapery trade; at that time was rather short and stout; in eighteen months had grown very tall and exceedingly slender; until I was twenty-one or twenty-two was greatly troubled with costiveness and headaches; from twenty-two until I was twenty-seven had rather good health, at least never confined to bed, except occasionally troubled with bile, but I thought little of it. I continued always very thin. I may add here that I was up to this age a total abstainer. I married at twenty-seven, when I began to suffer from indigestion after every meal. These attacks sometimes became spasmodic, when my sufferings for a short time were intense. About this time I consulted Professor ——, but he did not think there was anything wrong except a very weak stomach. He prescribed for the spasms. My own medical adviser now recommended me to try Bass's ale every night, which I did for a time, but soon got to dislike it, and gave it up; then whiskey, brandy, wine, and porter were all tried as a stimulus to the stomach, but any good I got from any of the above was only temporary. I commenced a small business of my own four years ago, and wrought hard for the first three years with some little success, but in March of this year I began to get very yellow and sometimes a little languid, but never laid up; much troubled with cold feet. I got through what we call the busy season rather well, indeed the more I had to do I felt the abler to do it. All this time I took my very carefully-prepared food rather well, but in the end of June, when trade began to fall off, I began to get worse, and my eyes now

became yellow for the first time, but still no pain. I had been seeing the doctor occasionally for the last three months, but he gave me no medicine, but always said, 'You must get away to the country as soon as possible.' I now made up my mind to leave the business for a time, but my friends thought it advisable to have other advice, so we called upon a man who stands high in the profession. He thought me very bad with liver disease and jaundice, and ordered me to the country at once; he was also kind enough to tell me before my poor dear wife that I might be in my grave in two months. He prescribed no medicine, but ordered me to get dandelion roots and infuse like tea, and take a cupful night and morning, which I have done ever since. I remained in the country for two months, without the least change in anything. About the beginning of September I came nearer home, but took lodgings about twenty miles north from ——. I had only been out for a few days when my colour changed, as well as the white of the eye, to my natural colour. This sudden change delighted us all, but, oh! it was of short duration, for in twelve days more I was taken very ill one night, with a cold sensation all over my body and limbs, then pain in the stomach and liver. This, I may say, was the first time I had felt any kind of pain for a long time, as I have not been troubled with indigestion for three years. I soon began to get worse, and had to return home about the end of September, and have been ever since confined to my bedroom, one day rather well, the next very feeble, and, I am afraid, getting weaker. I have taken nothing but the dandelion, except a mild purgative, which I have been obliged to use since being so much shut up. I have not taken any stimulants since June. For the severe pains I have had in the stomach and liver lately, the doctor ordered large poultices sprinkled over with mustard. These gave some relief at first, but the last attack I had they had lost their effect. I now want to ask you, sir, if I could bear the journey to Matlock. Of course, my dear wife and children would like me to be as near home as possible, but my own mind is set on Matlock Bank."

(*Bronchitis Case, and Doctors' Victim.*)

"I wish to submit my case to you, and ask your opinion as to whether I could derive permanent benefit from your course of treatment. It will perhaps be as well to inform you that for nine and a half years I have been employed exclusively in the night as a compositor. About nine years ago I had an attack of bronchitis, from which I recovered after an absence from business of three weeks, and suffered no further inconvenience until about three years ago, when I again had a slight attack, which kept me at home for a week only. After this I found the chest become very weak, and susceptible of cold, and I had much trouble to keep myself from being laid up. Notwithstanding the struggle I made against it, I was, about the middle of April last, compelled to succumb to a severe attack of bronchitis. For this I was treated by my ordinary medical man, but not successfully, for I have not been able to do a day's work since. When I was strong enough to travel I was ordered to Southport, where I remained three weeks. Here I gained some little strength, but a pain, or heaviness, or tightness in the left lung continued to harass me, and to rise a hill was simply impossible. This unhealthy action of the lung was still upon me when I returned, and my medical man advised me to be examined by Dr. Allbutt, who told me the lung was very weak, and required great care, but that there was no disease. I afterwards tried my native air, where I derived considerable benefit during the month I spent there. Still the dulness and unpleasantness in the lung continued, and has done so more or less up to the present time. I have no cough nor spitting, but am very weak, and soon suffer from fatigue; indeed, I am utterly unfit for work. To make matters worse, three weeks since I was seized with violent diarrhœa, and confined to bed for a fortnight. The strength, and good looks, and flesh I had gained before all rapidly disappeared; the pain in the

side and lung returned, and I now want bolstering up again. Of course six months' heavy expenditure, and no income, has seriously encroached on my little savings, and I am now much reduced in circumstances; but if you so advise me, I will give your system of treatment—in which I have great confidence—a trial. Would you please state your lowest terms, and I will endeavour to meet them. I am anxious, for the sake of my wife and two children, again to be at work. They are now with her mother, for I have had to break up my home."

(*The following is a sample of a great number of Cases where a simple cold has been, by the utter helplessness of the so highly extolled medical profession, brought to a state of real disease, causing sorrow and suffering to relatives, and death to the patient. Our simple treatment for bronchitis would have quickly cured. It is our great happiness to have pointed out a way to prevent all this misery, and save such.*)

"I trust you will excuse my troubling you, as I am uncertain whether I do right in applying to you direct or not; but we have come across your book, and are very anxious to hear some particulars about your Establishment before venturing so far south. My husband is a clergyman of the Church of Scotland, and has obtained leave of absence in order to seek the renovation of his own health, but especially that of our dear eldest child. She was supposed to have hooping-cough last spring, and was treated accordingly. The disease was chronic bronchitis, which afterwards during a visit to London developed into a bad attack of acute bronchitis. We have consulted the best London and Edinburgh authorities on chest complaints since, and they agree that there is at least very great delicacy in the right lung—in fact, that there is mischief there. She was twelve years old on the 23rd of August, and is growing rapidly—very thin—tolerable appetite. No cough except occasionally, and to-day she complains of constant tickling, huskiness, and tendency to cough. The weather here is most trying, and we think of taking her south next week. May I ask, sir, your opinion of such a case, and if the climate of Matlock would be suitable along with mild water treatment? Our allopathic doctor to-day spoke so strongly in favour of such places as Bournemouth, Torquay, &c., that I feel sadly puzzled. I know you to be so candid and honest that I thought I might venture to ask your opinion, especially as regards the climate of Matlock, a very material point."

(*Doctors' Victim.*)

"DEAR MR. SMEDLEY,—I write again on behalf of my brother, whom I have not yet succeeded in persuading to try your Establishment. I think it very bad indeed troubling you so often to write, knowing you have so much care, &c., but my brother has been to another doctor, who says he has got congestion of the eyes, and has cupped him on both temples. The second eye is also getting bad now. My brother wishes me to ask you, could you cure his eyes, or have you had such cases? I am greatly afraid of his constitution getting run down if he does not go to you soon. Perhaps you would be so kind as to let me have another few lines, if with some startling facts, or some such thing, to rouse him to go and try your treatment. Wishing you and yours numberless blessings, and with kind regards."

(*This Case cured of Congestion of the Brain at our Establishment eleven years before, and now quite well. No Disease of Heart.*)

"Accept my best thanks for your letter received yesterday, knowing from your great multiplicity of business and duties your time must be fully taken up. It is exceedingly considerate and kind of you to give me your opinion on my husband's case, and I sincerely hope he will attend to your instructions fully; then I am sure he will benefit from your treatment, which he seems to have every faith in. I felt very much concerned when the doctor gave his opinion, stating

he was suffering from a diseased or fatty heart; but as you say his heart is not affected, and he may be spared many years with proper care, and avoiding over-exertion, also stimulants, and tobacco, it is very cheering and comforting to me. When he returned home on Friday he seemed and looked so very much better for the short time he had stayed with you, it gave me fresh and cheering hopes of him. Mr. —— went from home yesterday, but hopes to be with you to-morrow. Thanking you very much for your marked attention to him."

(*Effects of Subcutaneous Injection of Morphia.*)

"Mr. ——, with whom I am residing, desires me to write to you under the following circumstances:—He has been for more than three months labouring under very painful and distressing symptoms. The first form which these symptoms assumed was that of rheumatism and sciatica. He was attacked with most violent and excruciating rheumatic pains in the legs, and in the region of the loins. Medical aid was procured, and after some time, by the administration of morphia in the shape of injections, the pain in the legs was relieved to a very great extent. Other symptoms, however, of a distressing nature set in, which may be described as follows: Excessive weakness and debility, rendering him unable to leave his bed; difficulty in passing the water; water very inflamed and high-coloured, with very aggravated symptoms of gravel; great obstinacy of the bowels, and inability to procure a passage, except by injections, which makes us suspect that he is suffering from piles. Perhaps the most distressing symptom of all, and that which precludes the possibility of rest for any length of time together, is a settled and excessive pain at the seat, accompanied with a swelling. Under these circumstances, Mr. —— has desired me to write to you, and ask your advice. He would be unable at present to come to your Establishment, but he thinks that in the meantime you may be able to advise him what course to adopt. Hoping to hear from you at your earliest convenience, and that you will be able to prescribe something for his relief."

(*We have cured all such Cases as the following which have come to us. Doctors never cure such.*)

"I have your book on 'Practical Hydropathy,' and I must say I approve of your way of treating disease generally. My right knee is in a bad state. It became bad about six years ago, and now I cannot walk without using a staff and a crutch. I was in Edinburgh last week, and consulted three doctors—one of them is a professor—and they all told me that it is white swelling, and that part or parts of the bone are diseased, and that all that can be done for me is to cut the diseased parts out, which would stiffen the limb for life, or amputate it. I should not like to have my limb either stiffened for life or cut off, if it can be cured. Can you cure such swellings? or what would you advise me to do?"

(*Doctors' Victim.*)

"Being a sufferer from dropsy, caused, I believe, by torpidity of the liver and kidneys, I have been advised by my friend to write to you for advice on the subject. I am a seafaring man, age thirty-four, having been for three years and a half on the west coast of South America. Returning home from that part in the depth of winter, 1869, I caught a severe cold, after which I noticed the water I passed was small in quantity, and very high-coloured, the legs, feet, and belly began to swell. At first, and for some time I was under allopathic treatment, until my stomach refused the medicine. Since April last I have been under homœopathic treatment, have been tapped four times, the last time in May; from none of the above treatment have I derived any benefit, as the legs and feet swell towards night, and it goes away partially by morning. The accumulation in the stomach is gradually increasing. I have

always led a very temperate life, never having taken wine, beer, or spirits, except by medical advice. I feel a great desire to try your treatment, and will come to your Establishment in the course of next week, if you will kindly advise me as to whether I shall derive any benefit from it. Please to forward me the 13th edition of your 'Practical Hydropathy,' for which I enclose 2s. 6d. in stamps.

"By your great kindness and permission, on Wednesday last I arrived a second time at your Free Hospital, and on Friday morning a good impression was made upon my complaint, and each succeeding treatment has been like a well-directed stroke, making the most marked and visible success; and before I left the bath-room this morning the whole real substance of what has formed my complaint for eight years of the most painful suffering is positively gone. To me it seems a dream, but no dream has come to me so pleasant for an age. I did not think it possible; but it is done, it is even so. Had this been an age of miracles I should have said this is one. I thought I would give you an early intimation of that which has so pleased and astonished me. By the further blessing of God, thousands shall hear of it, and learn what and where the true real and simple art of healing is. Nothing could exceed the kindness and skill of Mr. Freckingham, while at his establishment, Matlock Bank; and with feelings of the deepest gratitude to you for assisting in prescribing free for me, I am, &c."

(*Such Cases are never cured by the legal profession. We never fail to cure such.*)

"General ——, who was cured of rheumatism at your Establishment, has recommended me to place myself under your treatment. My case is this. Eighteen months ago I received a kick from a horse on the lower edge of the patella of the left knee. The result was acute synovitis, which has settled down into chronic. I have now no swelling, but if I attempt to use the knee inflammation at once comes on. My leg is almost quite stiff, having been kept straight ever since the accident. I can move the joint a little, but if I use it too much, as I have said before, inflammation comes on, and I have to stop. I am recovering, but very slowly, and this slowness I attribute to the presence of rheumatism in the joint. I am tempted to try your treatment, with the hope of the recovery being accelerated. Would you let me know your terms, and, should they be acceptable, how soon I should be able to place myself under your care?"

(*Doctors' utter helplessness to comfort poor suffering humanity, but add misery. Our natural treatment gives ease at once.*)

"A few days ago a neighbour, who has lately been an inmate of your establishment at Matlock Bath, lent me your book on "Practical Hydropathy." I have read the book with great interest, and am thereby induced to wish to consult you on behalf of my wife, with the view of placing her for a short time under your care, if you think her case one which would be likely to receive benefit from your manner of treatment—that is, if you are still connected with the institution; but I have been informed that the establishment at Matlock Bank has recently passed into other hands. Should you and Mrs. Smedley continue to superintend the treatment of patients, I shall feel greatly obliged if you will favour me with a line stating when it would be most convenient to you for me to bring my wife, and take your advice as to the desirability of her entering the Establishment. Age 53.

"I will endeavour, as well as I can, to give you a few symptoms of her complaint. She is suffering from rheumatic gout. Her hands have been affected at times for the last six or seven years, and the joints of the first and second fingers are enlarged. Still she did not suffer any great amount of inconvenience till last spring, when the disease began to extend to other parts of the body. Since then the feet, ankles, knees, fingers, thumbs, wrists, elbows, shoulders,

neck, and round the collar-bone, have all in turn been affected. At times also the sides, especially the *right*, about the region of the liver, have been sore and stiff, making it painful to move or draw a long breath. She has also at times passed a quantity of what appears to be bright arterial blood. Several medical men have been consulted; but no material relief has been obtained. In August her medical attendant advised her to try the effect of the Harrogate waters. She remained there three weeks, and by medical advice there, drank the strong sulphur and magnesia water. These seemed only to aggravate the complaint, and as soon as she reached home she was confined to her bed with rheumatic fever. She is much better now, and able to walk about; but the muscles are still weak and stiff, and I fear lest they should become permanently contracted."

(*Doctors' ignorance, and patient's strange neglect of our means of cure when he knew of it. It is doubtful now if his life can be saved. Our* 79, 80, 81, 82, 196, 178, 186 *Bath List would have cured him in a very short time.*)

"I write to you in the hope that you may be able by your hydropathic appliances to cure me of a very obstinate ulcerated sore throat. I was at your Establishment in December and January last for a month, and was there relieved of what I then suffered from—viz., pain in right side and chest, and palpitation. Before leaving you I contracted a cold, which affected my voice, and has made me hoarse ever since. But about three or four weeks ago this suddenly got worse, so that I could not speak above a whisper. Cannot swallow liquids without great pain and a quantity getting down the windpipe, producing paroxysms of coughing. My general health up to within a week or two since has been, however, pretty good. But now I seem to have lost all relish for anything. Stomach seems out of order, and there is a dense orange-coloured sediment in the urine after standing overnight. I have been examined by an M.D., who states that there are ulcers at the junction of the throat and windpipe, and that he thinks tubercles are forming on one lung. But he seems most concerned for the throat. He has touched it hitherto with nitrate of silver, but the insertion of a brush into the throat causes me to retch, as if vomiting were coming on, and produces soreness in stomach and sides. The doctor says he does not know whether he can cure me or not. He recommends me to take as much fat into the system as possible, cream, cod-liver oil, beef tea, revalenta, &c. I am confined to the house, and therefore have no great appetite. The doctor says I am not fit to go anywhere at present. I have also a pain all down left side and chest, and expectorate a good deal. The matter in daytime is white, at night rather yellowish; no blood. The doctor thus forbids my going away: says he does no tknow whether he can cure me —there I am, depending for my life upon the chance whether he can or not. Now, my dear sir, if you think you can relieve me, if you think I am not beyond hope——"

(*Previously given up Typhus Fever Case.*)

"I wish to present my grateful acknowledgments to you for your great kindness and skilful treatment to my son in restoring him to health. I hope you will be spared many years as a benefactor to a suffering world."

"I write to ask your advice as to my case. I have suffered I know not what, as I have been under different medical men, whose opinions all differ one from the other. One says it is a slight attack of rheumatism, another growing pains. Both of them gave me prescriptions and numerous quantities of bottles, which seem to have done me no good. My case put briefly before you is as follows. I am now eighteen years old, and for the last two years have suffered most acutely from pains and weakness in my legs. On rising in the morning I can scarcely stand, and am some time standing before I can walk a step. It also

gives me pain to walk down steps without support, or on rising when I have been sitting. Having heard of your Establishment from a friend of mine, and not knowing anything of your rules or regulations, I take the liberty to write to you, trusting I may not be unsuccessful in receiving an answer."

"I have worn a heating compress for the last nine months for congestion and induration of the spleen, brought on by cold bathing about two years ago, being anxious to learn to swim at the time. I suffered severely up to the time at which I began to wear the compress, which has done me infinite good, by having produced a crisis which continued to discharge matter up to about two months ago, when it ceased, and has not since discharged anything beyond an ordinary perspiration. I have read your book on Hydropathy, and have been greatly benefited and instructed by it, and was induced to adopt the treatment recommended in it only after failing in all other attempts to obtain a cure or relief from the medical faculty of the old school of medicine, whose pills, plaisters, and physic I have ceased to have any faith in. As I said before, I have been greatly benefited by the self-treatment, but am not yet quite right. Food does not pass the spleen well, being sluggish, and causing me to get out of sorts about once a week, and causes me to continue to be weak and irritable. My liver, stomach, &c., are in a tolerably healthy state, and appetite very fair; but am often compelled to abstain from food (even when I could eat heartily), through a heaviness and oppression at the left side, on the spleen. I yet continue to wear the bandage as I have done since I first began; but I am in doubt whether I am doing right or not, and whether some other course ought to be taken or not. Would the spongio piline be of any good? Please say, and also advise me what you think would be best to set this offending organ right."

"I have just finished reading your paper on 'Strikes,' and I should be very glad to find a great number of employers following your example. What a happy people we should be, if masters and servants would study each other's comfort and interest. My policy towards my employers is to do my duty when the master's eye is not upon me, just the same as when it is, and better of the two. I think sometimes that I am too sensitive, I cannot help it. I cannot help saying that the lines have fallen in pleasant places to the fortunate persons that you employ, and they have a goodly heritage. I say honestly and conscientiously that from my heart I wish you long life and prosperity. I am sure it would be a blessing to be a son of so kind a gentleman."

"Dear Sir,—About six or seven years ago I injured my spine, and the doctors at Leeds, where I then lived, ordered me to lie on my back till it was better, which they said would take at least a year or two. But, hearing of your treatment, I wrote to you, and you recommended me to go to George Davis's, which I did, and in a few weeks went home cured. Since that time I have in a great measure carried out your system as to treatment, and have never ailed anything since; and I am happy to say that in many instances where I have prevailed upon parties to try the remedies prescribed in your book, very satisfactory results have been obtained. I also for many months tried to prevail upon a cousin of mine, a young man about twenty, to go to Matlock to get cured of a complaint which seemed to puzzle the doctors under whom he was being treated, and after a very strong letter to him on the point, and when he and his family must have been persuaded the doctors were doing no good, but harm, he decided to go to George Davis's, and after being there three months, has gone home, as he says, 'a new man,' and seems unable to express his gratitude. It appears he had an abscess in his leg, which the doctors could not get open; but George Davis's treatment was successful, and I hear that there came a quart of matter from his leg. You will kindly excuse me for troubling you with all this; but I have ever

felt grateful for the cure I received and for the good I have seen done by your treatment, and it is in this spirit I have written."

"Sir,—I have been treated respectively for pluery (or pleurisy), ulcerated lungs, and lastly for congestion of the lungs. I have been blistered and purged until there is not only very little flesh left on my bones, but until I have not got the strength of a child in me, for if I walk thirty yards at the rate of fifty steps per minute I am unable to speak for want of breath, and yet, after eighteen months of blistering, &c., I am not a whit the better, but a great deal worse, both in body and pocket. My case is as follows:—I am an engineer by trade, and go to sea (until lately not been able through illness). I was ship-wrecked nearly two years ago, and caught a severe cold, but, being a strong, healthy fellow, I did not think much of it at first; tried several simple remedies, but it gradually got worse, until the cough became so violent that I could not get any rest either night or day. I began to spit phlegm, a thick yellow substance; latterly, and until very recently, I spat blood, sometimes in very large quantities, at other times blood and matter, now a whitish phlegm again, with a most heartrending cough. I have been recommended to you by one who has been under your treatment, and if you think there is any chance of relieving me you will perhaps have no objection to answering this note as early as convenient, so that I can come to your Establishment immediately. I must apologise for taking up so much time, but as I am only a young man of twenty-seven, I feel, like most people about my age, as if I should like to live a little longer.—I remain, yours most sincerely,

"——.

"P.S.—I forgot to state that I have a fistula, which has been on me about eleven months."

"It may not be out of place, now that I am writing to you, to say that I have been very much better in health since I went through a short course of your treatment; and I may add, too, that the person to whom you sent those articles, at Gosport, and who was given up to die by many doctors, is quite a new man, and was sufficiently restored to health to be able to go through the autumn campaign in Berkshire with his corps. Sergeant Reily will write to thank you for your kindness and liberality in making no charge for the articles you have sent him. I, too, beg to add my thanks, because it was I who advised him to write to you. Praying that God may grant you health and long life, I beg to subscribe myself your humble servant,

"J. BROPHY,
"Bandmaster, 101st Regt."

"From the perusal of your valuable work on "Practical Hydropathy," I find reference made to a Free Hospital; allow me to inquire of you the conditions of admission to the Hospital. I am an overlooker, and have been unable to follow my employment for eighteen months, and during this time have been under medical treatment, including Burton, Southport, and Cookridge, near Leeds. I have also a family of six small children, and though possessed of a little ready money, the result of carefully husbanding my wages previous to leaving my employment from sheer inability to work any longer, my resources have long ere this been exhausted, as I was anxious to get the best medical advice and treatment, and have had to pay dearly for that which has done me little or no good. I have been treated for rheumatism for several months, and latterly for enlargement of the knee-joint, caused it was said from kneeling at my work in repairing looms, but all has failed to do me any good. I am now reduced to the extremity of soliciting your favour of the conditions on which persons are admitted to your Free Hospital, to which reference is made in the eighth edition of your 'Practical Hydropathy' (pp. 152 and 343). My knees and ankles swell, with no inflammation, but very hot, much pain, soreness, and

stiffness; could like to be in one position, but I try not to give way to it. My bodily health is moderate, have a good appetite; but much trouble with a furred tongue. The doctors agree that I have a good constitution, and I am greatly anxious to avail myself of any chance there may be of a restoration to health, in order to provide for those who are dependent upon me. Your favour to the above, with particulars of the conditions on which you admit persons to your Free Hospital."

(*Case came and got well.*)

"I beg to inquire if you could give me any advice under the following circumstances:—About three months ago I caught a cold, which took the form of bronchitis. I got medical advice, and was ordered to bed and blistered twice on the chest, taking several bottles of medicine, and stayed in bed three or four days, then went to my employment as usual, and in about a fortnight was much better, and continued improving until about five weeks ago, or maybe six. I exerted myself and got into a sweat, my throat became sore, I had pains on the chest. I again went to the doctor, and was twice blistered on the throat, taking medicine meantime, and improved. The doctor now says my throat is very nice, and thinks I shall do without any more medicine if I can get to Southport for a week or two, and take cod-liver oil and a pint of porter daily. I am sorry to say, in spite of all this, that my throat still feels raw and lumpy inside, and I spit occasionally a white slime."

"My dear Mrs. Smedley,—I will first ask you to excuse me for taking this liberty. Mr. Smedley has worked a miracle on me—nay, more than one. Six years ago he did for me more than medical men could do. After I had been quite incapable of work for two years, I got his assistance at Lea, and returned home after a few weeks there, and have been able ever since, though poorly sometimes, to earn my living. It is now six years since I first went to Lea. In the spring of this year I got cold; I used all simple efforts to throw it off, but in vain. I again went to Lea, stayed a short time, came home and resumed my work, and am pleased to say that I am now as well as I can expect to be. Shortly after I came home from Lea—I think about April last—I wrote to Mr. Smedley to say how I was, and to thank him for all that good which I had through him received, not expecting to have an acknowledgment from that gentleman. He, however, did write to me a short letter, begging me not to deal with doctors, and I promise myself that I never shall. This letter was accompanied with a little book—the 'Ladies' Manual'—for the perusal of my wife. This book has been lent to a branch of my family, and has not been returned, for which I am sorry. My wife, by accident, fell this morning on a frozen stone, and cut her knee badly; I cannot say whether the bone is injured, but the flesh is turned up like a slice of beefsteak. I did for her the best I could; and am taking this my earliest opportunity of asking your advice touching what will be best for us to do, feeling quite sure that this request will be granted."

"Sir,—Allow me to thank you most gratefully for the advice and use of your Hospital while staying in Bow Wood, for I cannot find words to express my gratification at the kindness I have received; and although I am far from being well, I trust I may, with God's help and the knowledge of a portion of your valuable system of Hydropathy, further improve my health. I was called suddenly home, and so missed the opportunity of thanking you in person; I was very sorry, but as I had been away some time from the shop, they were very anxious for my return. If there is anything that I can do to return the obligation that I am under for past favours, it would be a pleasure."

"DEAR SIR,—I have been recommended to write to you and ask your opinion on my case. I will explain to you as well as I can, and shall be greatly obliged if you will give me your advice, for I have tried a good many remedies, but nothing seems to cure me. I may say I have got what the doctors call scurvy, or a scorbutic eruption on the skin. When I was a boy I got a hurt in the groins, and ever since that I have had an eruption on the skin. It comes every spring, and goes away almost entirely in the summer, and sometimes it is itchy, and when scratched there is clear water comes to the surface. Up to now it has only been on my legs and arms, but some months ago it commenced in a small spot on my cheek, and now it is on both cheeks and hands, and I feel ashamed to go about. I tried a doctor here, and he prescribed a lotion to wash it with, which seemed to make it worse; so I have given it up. I am induced to write to you and inquire if you could cure me if I was to come to your Establishment for a short time. I am very temperate—in fact, I have tasted no intoxicating liquors for a long time. Your reply I will anxiously look for to the enclosed address. I may say that it would be very inconvenient for me to be laid up just now, but if you think you can cure me by my coming to your Establishment I shall be happy to do so; but perhaps you can recommend something that would not lay me up from business. I may say in the parts affected the skin is thick, and not in a healthy state at all."

"DEAR SIR,—I have read your book on Hydropathy. I have been induced to write to you for your opinion of my son's case—whether you think your treatment would be suitable. Six years ago, when he was five years of age, he fell against a doorstep and hurt his right knee. It became very painful and swollen. He had advice, and iodine applied, but it got no better; but he was able to go about, sometimes more painfully than others. Three years ago he was advised by an eminent surgeon in Manchester to rest it three months, and he blistered it three times and ordered a knee-cap—he said to save the joint. He has worn it ever since until now, when it has become very weak and painful. He has been under several doctors, but all to no purpose, and now he can scarcely walk. At all events, I am losing faith in the old system, and shall be glad of your opinion of the case, and whether you think benefit would be derived from your treatment, with terms at your Establishment. He is our only son, and we should like him to be cured, by your assistance and God's blessing. We are members of a Christian Church, and have been for a great number of years. I think he could be cured with someone that would take an interest in him. We shall be glad if you will have the kindness to take his case into your kind consideration. From what I read in your book, I think you will do justice to it. An early answer will greatly oblige your humble servant."

(Case previously given up for Consumption.)

"DEAR MR. SMEDLEY,—I hope you and Mrs. Smedley have enjoyed your only holiday, and that you may have a very happy new year, and a great reward for all your labours of love in the now nearly past year. I dare say you will be expecting a letter from me in reply to your kind one of the 20th instant. I should have written sooner, but was waiting to tell you of the arrival safely of the meal and porridge can. I suppose you will go in on New Year's morning to the saloon, and there, as usual, wish your patients the compliments of the season. I shall fancy myself there that morning, if spared to see it. I am sure the ladies will not like a doctor nearly so well as dear Mrs. Smedley, but I am sure she does indeed require rest from such great labour and responsibility. May God bless all her efforts for ladies, as He has done in my case; for three years since I never expected to see another Christmas and New Year, and now I am hearty!"

(*Case from Vaccination.*)

"Dear Mrs. Smedley,—I hope you will pardon the liberty I have taken in addressing you and asking your advice, which I shall most thankfully receive if you will kindly proffer it. I have not the means to come to your Establishment, or I would gladly do so. I will state my case to you. I enjoyed good health until nineteen years of age, when I was vaccinated a second time, the small-pox being very prevalent. Father was at your Establishment at the time, with rheumatism. The following year a pimple came in the centre of my top lip. It gave me great pain night and day, and continued getting worse until it was the size of a threepenny piece, attended by inflammation. I went to three doctors successively, the third attending me twelve months. I had also an ulcerated throat; they both got well at the end of that time. Three years afterwards a substance formed and afterwards broke into a wound in the calf of the left leg. I tried several things, but nothing would cure it. I had also very severe pains in the right leg. I was recommended to get married; did so, but was no better. In about ten months I became a mother. The baby lived eleven weeks, and died from thrush. I have not lived with my husband since, as I think I am not fit to have children. I tried your treatment; got a crisis on both legs in a week. They seemed to be going on very well, though giving me much pain. I did not know at the time that it was crisis; was afraid it might be something else. Father was away from home, or he would have told me, and I could not go to him. I was persuaded to go as in-patient at the Queen's Hospital. Was there fourteen weeks. They would not listen to any explanation as to the cause of crisis. I was led to understand they used water treatment, or I should not have gone in. They dressed the crisis with white ointment, burnt the wound several times with nitrate of silver, then dressed it with resin ointment. I had been in three weeks, when another wound broke out above the right knee, underneath, rather deep, and about the size of a shilling. That was dressed the same as the other. They were nearly healed when I came out, but soon became much worse. I then tried the water treatment. Another broke out above the knee of the left leg. I got a crisis out on both legs again, without medicine, which I think has been the cause of a great deal I am now suffering from. They seem to be improving now very fast. But another source of annoyance has appeared. Hard lumps come out on the skin all over me, some very small, others as large as a sixpence. They look like what people call heat-welts; they are very irritable indeed—almost as bad as crisis. They appear very suddenly, and disappear the same. My eyelids and lips swell. They appeared first about six weeks ago. I have given you the particulars, which I thought was requisite, in as brief a manner as I could. I hope it will not tire your patience, which I have no doubt is very often called upon. Perhaps I may do right to tell you I was never regular before I was married. Will you kindly tell me what to do? We have the requisites for the baths, also your own and Mr. Smedley's books on Hydropathy. I am now twenty-seven years of age. By answering my earnest wish you will confer a great blessing on me, which I shall ever be thankful for."

"Dear Mr. and Mrs. Smedley,—I take the opportunity of writing a few lines to you, and beg to say that my good wife and I often think of you, and wonder how matters are going on at Matlock Bank, though it is so long since we had the pleasure of sojourning there. It is just three years since I was at your Establishment, when, as you well know, I was in a very precarious state of health. I do not consider myself particularly strong now, but ever since leaving you I have been pretty hard at work, and shall ever entertain a lively sense of gratitude for the benefits which, under God's blessing, I received from your treatment. I would like to name the considerable advantage derived by me in having been led to think more of, and to give special attention to, diet and daily ablutions. I would just as soon think of doing without breakfast as

abstaining from the little ablutions I have every morning, and wish especially to mention the great value I derive from using a large sheet, which I throw completely over me after giving myself a slight sponge down, whereby the bodily heat is kept up, and a most glowing and pleasant sensation caused. It is a most singular thing that never since I left you have I had a cold in the general acceptance of the term. If the use of the sheet as named by me were cultivated at the sea-side, instead of having only the bit of towelling which is usual there, I believe that a large number of persons would be prevented every year taking a surfeit of cold. I hope you will have a happy Christmas season, and wishing you all the best blessings pertaining thereto, believe me, yours truly, "——."

(*No difficulty with this Case.*)

"Dear Sir,—I have been advised to consult you upon the subject, I will therefore endeavour to describe my case, and would feel obliged if you could inform me by return of post whether you think you can do me any good; also whether it will be necessary for me to come to Matlock or not. For about seven years I have had what I think you call a withered leg; it has wasted very much from the knee to the ankle, and I am scarcely able to walk. I have also great weakness in my back, often a pain in my loins and between the shoulders. For the last six weeks I have had a kind of aching sensation in both legs, about six inches above the knees on the under side. My knees are generally cold. Both knee-joints are very weak. I am also troubled very much acridity, or what is often called heartburn; this latter has been going on about four years, and I am scarcely ever free from flatulency. I am very weak indeed, and quite incapable of duty. I am a Catholic priest, and the disease began whilst in college. Please to give me your candid opinion, and forward list of charges."

(*The following Case is a disgrace to the medical profession. Not only is the patient not cured, but so injured that he will never be quite sound again. The usual anti-vital treatment is prescribed, although the surgeon never saw anything but mischief from his practice. Our treatment is his only chance of even a bearable state of existence.*)

"I have suffered for about two years from a stricture and gleet; went for a short time to a hydropathic establishment near Vienna last year, without deriving much benefit, and had advice from a doctor in town for about four weeks last Christmas (injections and bougies), which I had to give up on account of a business journey, from which I did not return till lately, when I went again to the same doctor. In the meantime another troublesome complaint had come on—a sore throat and swelling of the glands, which I have had now for nearly three months. I am also much troubled with piles (not bleeding, but hard painful lumps coming out after every stool). More than a week ago the doctor passed again a bougie, and since that time I have had a good deal of pain and discharge, which the doctor calls inflammation of the prostrata. He orders me medicine and injections; and my body being already in a weak state, and having read your Manual, I am afraid of taking more medicine."

(*My answer to the Case.*) "10th July, 1872.

"Dear Sir,—I believe our mild local treatment is the only course for cure. I have had many scores of such cases. I cannot state time, but if you gave up what time you could spare at once, and come again, you would be able to go on with some treatment. The course you are now taking—bougies, &c.—I am quite sure will utterly ruin you. I have had incurable cases from the similar treatment by the first London surgeons. Such a complaint is never

cured by the routine of medical practice, but tumours brought on, and other complaints, as being the case now with you. The sooner you come the better for you. I am yours truly, "J. SMEDLEY."

(*Testimony.*) "June 15, 1872.

"DEAR SIR,—I would feel obliged if you would send me one of your tracts on 'Strikes.' I have read some of your letters on this subject in the *Manchester Guardian* with pleasure. I think if all acted with the great consideration that you do to their workpeople, there would be an end to their unhappy misunderstandings. I must thank you again for the book on Hydropathy you so kindly sent me; I have found it most useful. Sincerely hoping you may be long spared to go on with the good work in which you are engaged."

(*Marital Excesses, Physic, and Tobacco.*)

"DEAR SIR,—I have been reading lately a description of your baths, and think, if I can, of coming next Saturday to spend two or three weeks there. My age is twenty-seven; I have been married a year, and have one child; and I have done hard newspaper work for now about ten years. In that period I have had two severe turns, in which the pressure on my brain was such that I could hardly lift my head; and I have suffered in this way more or less whenever my work has been harder than usual. I am bodily strong, and before I was married was in the habit of walking in the country twenty miles on a Saturday morning, and a like number on Mondays. That has now ceased, though occasionally I still walk long distances. About a year and a half ago I began to have now and again a queer half-melancholy sensation, lasting about a minute. I took little notice of it until it began to increase in frequency and effect; and one night, two or three months after I was married, I had a fit, wherein, as my wife told me, I struggled hard and made loud noises. These fits I have had at varying intervals since; and for the most part, save for a slight feeling of weakness, I am unaware of them next morning. I have, however, taken certain medicine prescribed by a physician here, and the night turns have become less intense, though, by the way, in the day turns I am now so senseless that I often move and act without my own knowledge. I smoke moderately, have only half a glass of beer for dinner, and for supper have oatmeal, or revalenta food. I have avoided as long as possible going out for a holiday, and have been able to do my work. But now I see it is needful for me give up work for a month, and seek change of air and treatment. I therefore write to inquire if coming to you will be of use, and what are your terms. I shall come alone, and will bring only needful luggage." (See "Duties of Parents." J. Burns, 15, Southampton Row, London. 3s. 6d.)

"MY DEAR MRS. SMEDLEY,—I believe I have to thank you for a Matlock paper containing an article on your retirement, which only reached me a few days ago, owing to its having gone first to Edinburgh. We were all very much astonished at the news contained in the paper; and though we feel great regret at the idea of you and Mr. Smedley being separated from the Establishment with which you were in our minds, and in reality, so intimately associated, we feel sure you have been wise in giving it up when you felt the need of change. We were very sorry to hear about a month ago that you were unwell, but are glad to learn now that you are better. It must, I am sure, be a relief to you to be freed from such constant duty at the Bank, but the patients must feel the change very much. In addition to the regret which we feel for the cause that has led to your retirement, we deeply regret that there is no lady who can take your place; for when it has been your noble duty to be a pioneer in the sacred causes of life and health and lady

Loss of Semen, or the male seed, under certain circumstances, causes incalculable injury, miseries, and wretchedness, often resulting in paralysis, insanity, or inability for the ordinary duties of life. A little book, "Duties of Parents," Jas. Burns, 15, Southampton Row, London, gives some very useful hints. It is a subject seldom pressed by medical men, yet in our twenty-one years' experience I believe no failing of poor human nature causes greater misery and destruction. I have had a vast number of cases and letters from young men, who have commenced self-abuse even at the age of ten, and continued the dreadfully destructive practice till middle life; and in many cases the habit is so overpowering that escape is impossible, but in a vast many cases by our treatment I have succeeded in restoring to health and strength, see page 53, "Nervousness," also pages 382, 50, 52. I believe there is more destruction of life by these practices in males and females than by stimulants. I have known many cases of men marrying a second time, or after fifty or fifty-five years of age, bringing on paralysis or imbecility, especially if the female is much younger and strong. One of the wealthiest men in England died in eighteen months after marrying one twenty to thirty years younger than himself. It is certain to shorten life, if even spared greater calamities. There are exceptions, as in case of drunkards we hear of dying at eighty, but such are one in ten thousand. My maternal grandfather was twice married, had twenty-two children, his youngest born after he was seventy. The child grew up to a fine healthy woman. He walked 140 miles, to London, at seventy-five years of age, and at eighty-five walked eight or nine miles every day. He died in his ninety-seventh year, from the effects of an accident, with all his faculties perfect, except his eyesight not good; but from youth he led a quiet, rural life, on very plain diet; no physic, little stimulants, and no tobacco; spare frame, and an equable temperament; never pressed with business matters or harassed. I know men now living, or rather in a semi-state of existence from sexual excesses—a state almost worse than death.

doctors, all must feel what a disgrace it is to the country that no woman can be found who can shake off the fetters of prejudice and allopathy, and take up the work which you have been obliged to lay aside. I don't know how to express the sorrow with which we heard of Mr. Smedley's retirement also. To him belongs the honour, which all may well envy, of having brought to a state of great perfection the only rational system for curing diseases which the world has ever seen; and in his well-earned rest he will know that he is honoured by the hundreds and thousands whom he has been directly and indirectly the means of curing. Of all families that I know none owe more to hydropathy than ours, and I hope we are grateful accordingly; and, with kindest regards to Mr. Smedley and yourself, in which mamma and my brother join, believe me yours very truly. "——"

(*From an M.D., a friend of mine, who would gladly practice our treatment alone, if he dare do so, in one of the first hospitals in the kingdom.*)

"Saw a man to-day who had been treated for weeks for 'dysentery,' because his physician forgot to soil, or was afraid of soiling his finger. On seeing the motion I at once passed my finger into the rectum, and there found a tight stricture—'scirrhus" I fear. Still, I shall try what graduated bougies will effect for dilatation."

"High Street, Christchurch, Canterbury,
New Zealand, March 8th, 1872.

"My very dear Sir,—I have no doubt you will be somewhat surprised to receive a letter from this remote part of the earth. Although so remote, your book has reached it, through a friend of mine, whose wife had been in your Establishment some years ago for rheumatic fever. I was induced to get your book, which has proved a blessing, inasmuch it has kept us from being deluded any further since that time by the doctors, of whom there is a fair sprinkling in this young colony. If you will be kind enough to bear with me, I will give you a short outline of our history since we came to New Zealand. It is five years since I arrived here, and I entered the marriage state about a year after that, my wife having come out about the same time as myself. I am a tailor by trade, and have been in the business fifteen years. My health was generally very good in England, but since I have been here I have not had good health at all—particularly the last three years. I have been very ill each summer, and occasionally in the winter. Although, sir, I have been under the care of so many doctors, I am sorry that I am not able to tell you what is the matter with me. The first doctor described my complaint as consumption; the second one, a celebrated M.D., as inflammation in the kidneys; the third, diabetes; the fourth, liver complaint and very poor blood. After such conflicting opinions from the leading M.D.s of Christchurch, although we were in possession of your book, we were at a loss to know which complaint to treat for. We had our minds fully made up to come to England to your Establishment last year, but we had not the money to pay the passage with, as not only myself had been ill, but my wife also had been under their care, on and off, for over three years. After having left off all doctors' treatment, and attending to hydropathy as laid down in your valuable work, as far as we could, I so far recovered as to be able to save enough money together, with what furniture we had to sell, to pay our passage-money to England, so that we may have an opportunity of coming under your treatment, if you will be so kind as to receive us in your Free Hospital at Lea Mills. I have never drunk any intoxicating drink, neither have I smoked. My family are very healthy, my father and mother are over sixty years of age, and living still. There are eight of us in the family, all living and well except myself. We leave New Zealand for Melbourne on March 12th, and will then take the first

opportunity for shipping to England; and should we be spared to reach England, we expect to be there some time about the end of July, when we shall, by your kind permission, call upon you to see if anything can be done for us. I remain, your obedient servant, "——"

(*Distressing Case—a disgrace to the medical profession.*)

"DEAR SIR,—For a considerable time I have been very severely afflicted with a pain in my back, and I have had also the scurvy in one of my legs. These things have so interfered with my usually strong and healthy body, that I am afraid I shall eventually break down and be unable to follow my employment. I have tried some of the most able medical men in Macclesfield, and followed their directions most faithfully, but have derived not the slightest relief that is permanent help. I have read your invaluable work on Hydropathy, and also conversed with those who have experienced a vast amount of good, nay, been perfectly cured, by placing themselves under your care and treatment; and I am, dear sir, very anxious to avail myself of the means of coming to Matlock, providing it is at all practicable for me to do so. According to your work, the price of admission to be put under treatment in the Hospital is two guineas per week; could you kindly say whether there are any lower terms than these, and if not would you make an exception in my favour? I am only a working-man, but I trust a Christian man. I am a local preacher belonging to the Methodist New Connexion Society, and am anxious to have my health if possible to do more for my Master before He calls me hence. Will you please answer this by post, as I am particularly desirous to know your terms, and, if possible, to place myself under your care, which I think, under the blessing of God, will be effectual."

(*Blisters and physic still the rule, to the destruction of poor ignorant humanity.*)

"DEAR SIR,—I have been suffering from sciatica for some four or five weeks. I had two bottles of medicine from my usual medical adviser, which did me no good, and then he gave me a blistering plaister, which rose well and discharged much, but did no good. I then got leave of work, and went to Southport for ten days; had three baths while there. I came back in better health, but no less pain in the left leg and hip. I have been following my calling, as manager of a cotton-mill, for one week since, but the pain has kept increasing, so that I am not able to go about so as to enable me to follow my calling for the present. Now I have got one of your works on Hydropathy, and have read with great interest the similar cases that you have treated; and I am very desirous of coming to Matlock to have the benefit of your treatment, and am thinking of coming on Monday next, if able to do so, that is, assuming that you have room, &c."

(*Lost by doctors' treatment.*)

"DEAR SIR,—Having been a sufferer for the last six years with bronchitis and asthma, which very much emaciated me, and the last twelve months has turned to dropsy, through the kidneys not performing their office, and am sorry to say I make scarcely any water at the present time; but the other organs of my body seem in pretty good health. My appetite is generally good, and sleep pretty well in a sitting position, excepting the cough, which is very troublesome. I have been under medical treatment since Christmas, and they have given me strong drastic purgatives with diuretics, which have carried the water through my bowels, instead of the proper channel; and I am now on my bed not able to move, through my legs and body being so much swollen and stiff. I tried your spirit-lamp bath for the first time this morning, and am anxious to try if there can be any reaction brought to bear by your treatment on the kidneys."

(*If medical students cannot escape ruin by the professional practice, what chance then have the public, who are entirely ignorant of the science of life? This Case was simple enough at first, and could easily have been restored by sensible, rational treatment. Now all the prospects of life are blighted.*)

"My dear Sir,—My eldest son, now twenty-one years of age, has been studying for the last three years at the Leeds Medical School. He has passed one examination at the Royal College of Surgeons, London, for membership with that body, and is now simply waiting (of course continuing his study till eligible) for the final or pass examination, which will not be till next summer. Though otherwise well, he is suffering from partial paralysis of the hands, accompanied with anesthesia, and also with atrophy, or muscular wasting. Before he began his professional studies he suffered from paralysis of front muscle of left leg, so that he could not draw up the top of his foot; and also from an affection of the palms of the hands, which was pronounced to be psoriasis, though there was no cracking of the skin. That has disappeared. Of course I did not have him entered at the medical school till after consultation with our medical man, who, with others, declared that there was no reason whatever why he should not enter the profession. Now, however, the insensibility of his hands and the inability to perform operations requiring fineness of touch and firmness of handling, presents a very serious bar to the likelihood of success in his vocation. I could get him into some merchant's counting office, for he writes a beautiful hand, and is otherwise fully competent for such work, but am anxious before doing so to ascertain whether there is any possibility of having a cure effected by hydropathic appliances. The medical men here give very small hope of any amendment, and he himself scarcely dares to hope for more than that the disease may become stationary. It is said to arise from the effect of inflammatory action, now subsided, on the spinal cord at the base of the brain. Have you had under treatment any similar cases?"

(*Diarrhœa Case.*)

"Ipswich, Queensland, May 15, 1872.

"Dear Sir,—Some time ago I bought a copy of your book on the cold water cure. I carefully read it, and from the estimate I formed of your character I venture to hope that you will grant me an answer to this letter, giving me directions how to treat myself by cold water for an affliction under which I labour. I have failed to find directions of treatment in your book for a case like mine, or I would not have made bold to trouble you. I am forty-nine years old, my height five feet nine inches, weight one hundred and fifty pounds. I have been a teetotaler from a child; but from a child I have been of a weakly disposition, and have been subject to weakness of the stomach, yet I have on the whole enjoyed decent health. My father was a very sickly man, suffering much from indigestion, but he was an excessive smoker. I may here say that since reading your book I attribute his sickness and death greatly to that pernicious habit. He died of apoplexy; but I never smoked a pipe of tobacco in my life. I joined the Church (Methodist), and signed the temperance pledge, when quite a boy, and by the blessing of God I have been able to steer clear of those vices and excesses that have ruined such untold numbers of our fellow-creatures. I am an Englishman, and a Lancashire man. About seventeen years ago, from the hopeless and dreary prospect that lay before me in the old land, I determined to emigrate to this sunny land. When I came here I saw there was a chance to improve my circumstances, and to surround myself with comfort and pleasures I had so long struggled to obtain at home; but, sir, an emigrant's life is in many respects a hard life, though generally a cheerful and happy one. It is hard work to be felling and clearing forests with the heat at 80 and 90 degrees in the shade in summer. A healthier climate I do not think exists than this. Our summers are very hot, but there are about eight months of the year as enjoyable as man

could wish. Well, sir, I saw I had a chance by industry and temperance to rise. I set to work with a will—hope, and a wife and several children, nerved my arm. I have to some extent succeeded. I have got my farm; I have my garden with grape vines and orange trees, and many other tropical fruits: but I fear I have worked too hard, and paid too great a price. My health has failed. For the last two years I have been afflicted with relaxed bowels. The evacuations have not been excessive, but without pain. My strength continued until a few weeks back unimpaired, but I am now getting very weak, so much so that I can do no work. I have a horror of doctors and their drugs from what I have seen in my father's family; yet for the first time in my life I have been compelled to place myself under one this week. He gave me a prescription for some medicine containing steel, but I as yet find no relief. I have many years used wet sheets and bandages for my children with good results, and when unwell I have often taken them myself. I am taking a sitz bath now at bed-time, and it helps me to sleep—my sleep before using it was broken by horrid dreams and nightmare—but my relaxation continues. My tongue is clean, I have never suffered much from bitter risings in the mouth; but I have always been troubled with vomiting back my food. Since coming out here I have had several severe attacks of giddiness in the head, utterly prostrating me for a day or two, not being able to bear the faintest light or the slightest noise—when the 'grasshopper has been a burden'—but I have not for twelve months had an attack of this kind. I may say that my appetite has always been better than my power of digestion. Often when I have eaten a hearty meal I have afterwards felt I have taken too much, and have vomited part back again. I have no doubt but that we Australians eat too much animal food; it is bread and meat and tea every meal. I have been in the bush for months together living on damper (unleavened bread) and salt meat. There is no help for it, for away from the towns in the bush you cannot get fresh meat, and if you could, in hot weather it would not keep a day. I have often felt evil effects of such fare. I have now, sir, given you the best description of my habits and disease I can. I feel confident that a proper application of the water cure would do me great good, and probably cure me altogether; but out here there are no cold water establishments, and no medical practitioners who look upon it as worth trying. It is physic, physic, physic; and, as I said before, from what I have seen in others I have contracted the greatest horror for drugs. May I, therefore, venture to hope that you will kindly grant my request, by giving me directions how to treat myself? By so doing, you will receive my deepest gratitude. Praying that your life may be long spared to minister to the well-being of your suffering fellow-creatures."

(*Advice for above Case as under.*)

DIARRHŒA.—When only slight attack, 67 (see Bath List), and using 105½ after each action of the bowels, and applying 174, will prove sufficient; but should it not abate, 231 will be necessary, still using the 105½ as above. This latter removes any acrid matter, which generally lies in the rectum, and irritates and excites the frequent action. Diet is also particularly to be attended to. 211 will be the best—isinglass dissolved in cold water; and when jellied take a tea-spoonful every five minutes (this will take off thirst, and thus prevent the necessity of taking much water), and if much pain toast and water will be best, but only just warm; nothing hot should be taken. If the colic pains continue and the disease assumes more that of cholera, then the remedies laid down for that disease (see page 218, "Practical Hydropathy," or 65, "Manual") should be immediately and strictly followed. The general resort to opiates and chalk is most injurious, and leads to sad results sometimes for the remainder of life; all stimulants also bad. When very faint, may have a little sago well creed in water, and a tea-spoonful of brandy put into a coffee-cupful of this sago, and take it nearly cold. This acts very differently as food to the same quantity of brandy in water.

Perfect rest of mind and body are most requisite, and when the disease is over the whole system should be comforted and renovated by a little tonic treatment, such as letter F, or U, or C, whichever suits best. (See Home Treatment.)

(*Doctor's helplessness for cure or relief.*)

"A number of friends advise me to take my wife to your Establishment for the benefit of her health. She had an illness (a bilious attack the doctor called it), which completely knocked her up for two or three months. She is somewhat better now, but troubled with a stiffness in the hip-joints. She has no pain to speak of, but after sitting some time she has a stiffness when beginning to walk. When fairly set agoing she gets on well enough, but easily fatigued; at night always a sense of great weariness she did not formerly feel. Her general health appears to be pretty good. Do you think you could remove this stiffness, which some people take for a species of rheumatism? I may state that she is forty-nine years of age, rather stout made. I am not very well myself; troubled a good deal with indigestion, and perhaps you could mend us both. What length of time would we require to stay? Would you kindly send us a prospectus by return of post?"

"My brother, a young man of twenty-one, is just recovering from the last of three severe bowel attacks within the last two months; the doctor terms them biliary derangement, approaching jaundice. One was followed by an abscess on the anus, and fears of fistula were entertained, he having had two abscesses there within nine months. Do you think Hydropathy would be of any use in his case? He is a teetotaler; of very regular habits; his occupation is sedentary (an architect), but he walks five or six miles daily, or rather *did* before these attacks, which have completely pulled him down. He is now very weak; on Saturday was slightly delirious, but will be well enough, the doctor thinks, to return to our home in London on Saturday, unless you advise coming to Matlock then. I could bring him, but he would probably have to remain alone."

(*Appeal, and doctor's helplessness. Our* 64, 69, 168¾, 220, *would give immediate relief.*)

"I now venture to lay my case, at the last extremity, before you, and ask whether you can help me. For a long time I have been very bad with stomach and liver complaint, but have been entirely laid aside since Whitsuntide, and am sorry to say compelled to be under my club doctor, as I could not afford to sacrifice my little pay. But I am but very little better for all he has done. I have been so feeble ever since the attack as hardly able to hold up one moment. The doctor says he can do no more for me than give me a little something to assist digestion. I am persuaded that if you would be so kind as to take me into your Free Hospital it would save my life. I have great pain in my stomach and all up the right side, and swollen bowels. I am not able to say more. As I was not able to wait upon myself, I am at the present time at a friend's house. You will remember me as the person to whom you was so kind a few years ago, and with whom I was acquainted when a boy, and from whom I had many kindnesses from your dear father in the Church Sunday-school, Wirksworth. I mention these things that you may recollect me. I therefore throw myself upon your kindness, and hope you will help me."

(*I advised the following Case to come. We have never failed in curing the most obstinate skin diseases, and restoring the general health, when they would give time, which it is evident such Cases require. Here is a Case, after many years' treatment, left in a hopeless condition. Six months' of our treatment would have cured him.*)

"For many years I have suffered from eczema, and have spent a little fortune in consulting endless doctors, both allopathic and homœopathic, and also

Dr. ——, who has the credit of being the king of doctors for skin diseases. Everything that has been prescribed for the last ten years has failed to afford me relief, and the irritation at times is almost unbearable. I have long despaired of getting well. I met a friend a few days ago, and mentioned my ailment to him, and he placed in my hand your book on 'Practical Hydropathy,' and begged me to read it, and at the same time recommended me to try your Establishment. I lost no time in purchasing the book. The parts I suffer most from are the scrotum and testicles; but the irritation attacks me in other parts, viz., the armpits, ears, neck, whiskers, arms, &c. Several medical men (Dr. ——, the great advertiser included) gave it as their opinion that nothing but arsenic would cure me. Dangerous as such a remedy is, I thought it better to give it a trial than to go on suffering as I did. My medical adviser here being of the same opinion, I submitted, about four years ago, to a course of arsenical treatment for seven months, but, alas! I regret to say, without the least relief; sometimes it leaves, and afterwards it returns again. Ever since taking this arsenic my feet have been painfully tender, with a numbness and prickly feeling, which I have never been able to get rid of, and they swell a good deal after a walk of two miles. Many remedies have been prescribed for this, but with no success. Whether this arises from suppressed gout, or the effects of the arsenical treatment, I know not. I have been treated for my feet for upwards of three years without any relief, which does not reflect much credit upon the medical profession, and hence my inability to take walking exercise, that great promoter of health. The following ailments I also suffer from:—Dyspepsia, heartburn, flatulency, constipation, &c., and tongue never clean; all caused, I fear, from a disordered stomach, which is the bottom of all our evils, at least that is my feeling. I find the generality of doctors take but little interest in questioning their patients regarding diet, &c., with a view of finding out the causes that lead to these disorders, without which I cannot see how any correct conclusions can be obtained, to enable them to prescribe the necessary remedies to afford relief. It is not at all unlikely that gout, and the other disorders I am afflicted with is, directly or indirectly, the cause of the irritation. In other respects I feel hale and hearty. My constitution is strong, sleep and appetite good, and the medical men look upon me as a healthy subject. It is possible I cannot find out what disagrees; tea, coffee, and cocoa at times cause heartburn, and often I take them with impunity. Constipation is a sad evil with me, and it is only of late years it has troubled and grown upon me; not being able to take the exercise I could wish may in some measure account for it. I have endeavoured to describe all my diseases and plagues as well as I can, and which must plead my excuse for entering so much into detail; so I take the liberty of addressing you, to ask you to be kind enough to give me your candid opinion and advice respecting your Establishment, and whether you think the treatment will afford me the relief I am longing and sighing for. I observe, at page 154 in your book you have been very successful in curing many bad cases of skin diseases, so it is possible your treatment may succeed in my case, which I do not think resemble those alluded to by you, as I have no scales or scurf. The skin is contracted and thick in the lower parts, and were it not for my scratching, there is nothing to be seen outwardly. No external application appears to do me the slightest good, so I must attribute the irritation (which is sometimes intense) to internal causes, &c."

(*The following Case would have been saved had sensible means been used at first—our* 66, 69, 162, 220—*but now hopeless of cure.*

"I venture to trouble you respecting the case of a friend of mine, who is suffering from what is considered to be a tumour in the left side of the bowels, and I beg to ask your opinion as to probability of benefit by your system of

treatment. The person is about forty-five years of age, and previous to his present illness enjoyed good health, but very corpulent. 1st. The cause of the tumour is thought to be a fall which he had about twelve months ago, although no ill effects were felt until about six months after the occurrence. He has been under the care of three medical men in the district, and has been examined by Dr. ——, but they give no encouragement or hope. 2nd. The tumour, or whatever it may be, is hard and painful to pressure. Sudden motion also gives pain. The action of the bowels is much obstructed; in fact, until within a few weeks action was impossible without purgatives, and often the excrement was coated by blood. The passing of urine is often difficult, and gives pain. The treatment by his medical attendants was frequent blistering, sometimes at intervals of two or three days, giving purgatives to produce action of bowels, and having so much pain he had almost nightly to take a draught to produce sleep, prescribing generous diet to support strength. About six weeks ago he was induced to try the hot sitz bath, and from it he found considerable relief, mitigation of pain, and very much assisting the passing of urine. From the benefit received from this simple bath, we infer that the hydropathic treatment might be the means of doing him much good."

(*Doctors' helplessness. A Case we should have easily cured in a few weeks.*)

"I write you to ask your opinion about the Matlock Water Cure Establishments—J. Smedley and others—as to their being adapted to the following case:—About six weeks or two months after Christmas, Allan had a very singular skin eruption on the chest, abdomen, shoulders, back, and loins, and slightly developed on the arms and legs, not sores, but discoloured patches, some as large as a florin, and rough, as if an assembly of small spots, with intense itching. I had him home under Dr. —— for eight or nine weeks, and he had a course of eleven baths at Woodhall, and at the end of the term the doctor advised that he should go back to his situation, and be put under the treatment of Dr. —— there. I did so, and he attended him till Midsummer, or rather till a fortnight ago, when he came home for his holiday. He wrote (that is, Dr. B ——) advising me to send him to Harrogate, as it was an obscure form of skin disease likely to prove very obstinate, and which, if let alone, likely to prove chronic; all of which advice merely proved to me that when Dr. —— was beat with the case he advised me to see Dr. ——, and when Dr. —— was beat he in turn recommended Harrogate. Now would it be too much to ask you to write by return, and tell me if you think Matlock would be the place to send him to, and if so where to?—as I should like for my wife to go for a week or fortnight as well, if the place is not too expensive. She always suffers from the old grievance of weak back, and altogether out of sorts. I must now conclude, hoping you will not neglect writing a line or two in return, as I do not want the lad to lose any more time at home."

(*It is commonly stated blistering, &c., is gone out; but in this Case, as usual, torture instead of comfort is applied, and a plaister to stop the natural exudation of waste, totally contrary to natural requirements.*)

"Will you kindly give me your advice? My daughter, aged eighteen, has been ill of rheumatic fever now six weeks. She has been under medical treatment the whole time, in addition to which we called in the aid of Dr. ——, of ——; but she is at present unable to walk, though nearly free from pain, with an improved appetite. The medical gentlemen tell us that the left mitral valve, through which the blood goes into the heart, &c., is affected, and may be her whole life, by a deposit of lymph preventing the valve properly closing, and thus causing a regurgitative action of the blood. They have blistered over the heart, and now is applied a large plaister there, and the medicine is tonic. Can you, from such an imperfect statement of her case, advise me what to do; or if I can

soon remove her to your Establishment, do you think you can cure her?—and if so, what are your terms? She is nervous, and would like to have a room with her mamma."

(*Case for sympathy; shall take into our Free Hospital without any charge.*)

"I am and have been for several months suffering from spasmodic asthma. The paroxysm is very acute, and having had one of your books lent me, I feel to have great confidence in your treatment; only my means fail, and I am ashamed to ask you the favour, as I know it will require a month's treatment to do any good for me. Dear sir, if you could kindly allow me to come to your Free Institution, I would give all the money I could get—and I think it will be about two pounds—and I shall ever be grateful; and if I recover I should feel it a privilege to pay at a future time the same as if I had been in the other Institution. I wrote to a gentleman named Woodhouse, and thought of going to him, but I cannot find means. If I have taken an undue liberty in writing this, please pardon. I may say that twenty years ago I fetched a boy out of Coleorton fish-pool in the depth of winter, after running a mile, and have suffered more or less ever since."

"Edinburgh.

"DEAR SIR,—I am anxious my son should come to Matlock during his holidays in September. I wish to know the charges at your Establishment. I have such continued faith in your treatment, as it worked such wonders on my brother-in-law, twelve or fourteen years since, and have recommended it to all I have come in contact with since."

"You will doubtless recollect that in March and April last I was one of your patients, but owing to your excellent treatment I am now perfectly recovered, and am in good health. I now write to ask if you would kindly allow myself and one friend to look over your Castle at Riber on the afternoon of Thursday next."

"In September, 1871, I accidentally heard Matlock Baths eulogised by one who mentioned your treatise on Hydropathy, a copy of which I eventually procured for perusal. Being determined to have a test on a small scale, I have during the last six months partially verified the principles advocated. Instead of another unqualified failure, drugs having repeatedly done mischief, the results are not only encouraging (much in little), but also outstrip the best efforts of the highest medical authorities. With hope thus revived, I now seek the entire renewal of the constitution."

(*Case eighty years old, with great irritation of skin on the legs and arms, and a wound in leg.—For the numbers named, see Bath List.*)

To all the irritable parts apply 147, varied with fomentation of thick cotton towels (commonly called bump sheeting), immersed in hot meal and water, and when not applying either of these keep 173¾ on; and where any sore or wound put on wash-leather squeezed out of warm water under the 173¾; will give great relief. But the evaporation, or meal and warm water immersion as above, should be continued for hours together, or so long as the patient can bear it. This plan will soothe the most and heal the quickest. All exposure to the air must be avoided, as it greatly aggravates the irritation. Also general treatment, as 13½ or 22½, and an occasional 50, 78½ and 48, should be applied, according to the physical power of the patient. It is utterly impossible for any injury to result from these simple means, but perfectly certain comfort to the whole frame. Our 168¾ with 220 under would put new life into the stomach and bowels. After a hard life of fifty years' severe work and bodily and mental suffering, known very well to my friend for whom I am writing this and having

been on the brink of the grave from fever under medical treatment, and twice on the very verge of life from fatigue, harass, and constant confinement in my practice, I find myself, in my seventieth year, without an ailment, and more full of life and vigour, mental and bodily, than I was twenty years ago, and all resulting from our mode of treatment and diet, with God's blessing on the means. During my fever the servant put my arms in tepid water. I exclaimed, "How delightful!" but the doctor stopped it, and all burning sensation came on again. I escaped by the skin of my teeth and a strong constitution.

(*Heart Disease arrested when under doctors' care. This Case would have gone on to utter ruin.*)

"At the latter end of last April and beginning of May, when Mrs. Smedley and yourself were from home, I spent a fortnight at your Establishment at Matlock Bank, with a view, by God's blessing upon the means used, to the recruiting of my health, which had been debilitated by overwork and anxiety. I was suffering from irritation of the heart, for which I had been treated allopathically some years ago, but it had of late increased, and been attended, when much pressed with anxiety, with slight cerebral irritation also. My stay was very short, but I considered that the treatment began to tell upon me beneficially. On my return home I much missed the treatment, and felt depressed and wearied, but as soon as I got the bath, &c., that I ordered at Matlock I followed the directions of Dr. Hunter and Mr. Ward, taking a washing sitz 95 or 96 on rising, 106 or 154 in forenoon or afternoon, when convenient, and wearing 215 at night when requisite; also taking 13 and 10 once or twice a week, and continuing to wear the body-bandage 168¾ dry. My heart is now stronger—that is, I mean less readily irritated by exertion, and the pain across my forehead and eyes seldom troubles me now."

"I have been suffering during the past twelve months with great weakness in my legs and knees, and nervous twitchings; also pains in the back and each side of the lower part of spine. I walk exactly as if I had a slight attack of paralysis, and I believe my medical adviser has treated me for that, but has not succeeded in doing me any good. Since then I have tried another gentleman in Exeter, who thought it was chronic rheumatism and lumbago. Before I could give him a fair trial he died. I am fifty-two years of age; general health very good; but as far as my powers of locomotion are concerned, I am no better than I was the first moment I went under treatment, and am given no hopes of ever getting better. I have been recommended by a friend to try your Establishment as the only means of ever getting better. May I ask your candid opinion? Can you give me such hopes? I have a sense of coldness in the left leg, and at one time I had scarce any or no control over the muscles of my body."

The importance of gaining some knowledge of the structure and functions of the human frame in early life cannot be exaggerated. Lifelong suffering or incapacity, attacks of disease entailing years of suffering, and in many cases death, resulting from some act or course of indiscretion, might be avoided, or when attacked might easily be remedied by our simple natural processes, easily available at home or on a journey. It is when a stitch is let down and not soon taken up that the disarrangement and disintegrating of the frame goes on to chronic and so often incurable disease; and as to applying to doctors, allopathic or homœopathic, the statements from sufferers in this book show that their remedies only aggravate the mischief.

(*Rupture.*)

"A few days since I happened to see at the house of a friend your book on 'Practical Hydropathy.' Since then I have obtained one for myself, and I

must say I find some of the best and easiest remedies for human suffering in it. There is, however, one kind of suffering of which I find no mention in your book, and that is rupture. Will your treatment cure that?—and if it will, how long will it take to cure it? I should be glad to come to your place for a short time if it would cure me. Hoping you will kindly answer this."

(*Advice in the above Case.*)

Our 107 Bath List; 163 or 168¾ in night, without truss, resuming truss in day. Rub chillie paste over the place under truss in day (see Home Treatment); also 50, 48, 73¾, all to get good functional action. Will take off pressure from bowels. By these means we have cured rupture when not of long standing, and even when so this course will prevent aggravation, and even save life.

(*Case eighty years of age, difficulty in breathing.*)

"I want your advice about my health, if you please. I cannot lay in bed at nights, but sleep in an easy chair at bedside. The reason is, because I cannot sleep for making such a noise in my breathing in bed, and I am quite easy in the chair; but when I get up and begin to stir about, then I am short of breath—so much so that I cannot walk far without resting. I have no pain anywhere."

(*Advice for the above Case.*)

Letter H, Special Treatment (see Index), with 69 or 23 Bath List. Sometimes 179 or 186 dry. A little chillie paste rubbed on chest useful.

(*A very slight application of our stomach and liver treatment would have cured this Case; but, as usual, the anti-vital practice of the profession only aggravates.*

"Being a perfect stranger to you, I must apologise for thus writing to your but as I believe you are willing to lessen the sufferings of humanity wheneve; practicable, I have less hesitation in thus troubling you than if I had not faith in your good intentions. A friend of mine, employed as foreman over the puddlers at the works of Sir J. Brown and Co., has for three years been troubled with dyspepsia. He is now in such a state that he is almost ready to rush unbidden into the presence of his Maker. He has tried many doctors, and only the day before yesterday returned from a fortnight's residence in the Isle of Man. He states that for ten days during his stay there he was as well as he could desire, but now all the old distressing feelings are returning—sleepless nights, loss of appetite, extreme lowness of spirits, and melancholy: in fact, he feels a burden to himself and to all connected with him. His family is a large one—eleven children—and were it not for the thought of their unprotected state, I fear a dreadful end would be put to his existence. I tried to persuade him to come to your Establishment instead of going to the Isle of Man; but his friends have not my faith in your treatment, and class you with the other doctors, and conclude, as they have failed in giving relief, you too must fail. I don't think so. My friend has desired me to write and ask your opinion of his case. All the doctors agree in saying there is no organic disease; only sluggish liver, constipated bowels, and consequent depression of spirits. My friend is a member of a Christian Church, and would like to take an active part in his Master's work, but when labouring under this disease he feels forsaken both of God and man. May I, therefore, earnestly yet respectfully ask your Christian sympathy for my dear friend, and your advice in his case? If you think any good would be the result of a visit to your Establishment, he does not wish to encroach on your liberality, being able to pay whatever may be your charge, within moderate bounds. Trusting to have an early and favourable answer, I beg to subscribe myself, "____"

(The following pitiable Case I have admitted into my Free Hospital.)

"In the first place I must ask pardon for the liberty I take in addressing you, as it is the bad state of my health and my poverty that compel me so to do. I am only a working man, a fitter. I have been ill eighteen months, out of which I have not worked three months; but have been worse this last seven months, out of which I have not worked one week. I am a married man, having a wife and two children depending on me for support, while I am helpless and can do nothing. I have for several winters had bronchitis, but being in Leeds early last year I had the misfortune to sleep in a damp bed. I returned home to Meadow Hall, where I was then working, which is about three miles from Sheffield, but from that date I found myself coughing and spitting a very great deal, and very short of breath—in fact, I could not walk ten yards without resting to catch my breath. I had Dr. Morton and his assistants attending me until last January, when they told me the water and air of that district did not agree with me, and I would be a dead man if I did not remove. With that I went with my family to Bristol, but only to suffer worse than ever; in fact, the doctors held out no hope at all. At first the doctors said I was suffering from chronic bronchitis, afterwards, as I got worse, phthsis; but still, as I had held my own so long through the bad weather, as the summer advanced they said I might pull through, but I must now go away for change of air, which, through the kindness of my fellow workmen, I have been able to do. I have been at my sister's here three weeks, two out of which I have taken no medicine, and I must say I have improved a little. I have since being here had one of your books on Hydropathy lent to me, which I have read with great interest, also the advice of several people who are acquainted with your system, who think my only chance of life is getting your advice or into your Establishment; but I cannot avail myself of the latter, only by your charity, or by letting me work, if ever able, to repay you, as it is hard to give up life for death in one so young as I am, only thirty-one years of age. But, dear sir, if you will write me a few lines in answer to this, and state any day and the hour, I will be at your Establishment to see you, if possible, as I will have to pass through Matlock on my way to Burton-on-Trent, where I wanted to spend a few days before going back to Bristol, to see if the air there would do me any good; so I must now again ask forgiveness for having so long trespassed on your time. Hoping to hear from you soon, I am, yours respectfully, "DAVID BROWN."

Case got well.

"I have been suffering from diabetes for some twelve months past, and have been under the allopathic treatment during that time, but cannot get any benefit from it. I have been drugged very much, first with one thing and then another, till it has caused my stomach to be bad, so much so that I cannot well take solid food. A friend lent me your book on Hydropathy, which I have read. Since then I have given up the drugs, and tried some of the poultices, with good results. I trust, sir, you will excuse the liberty I have taken, and the nature of my request. Having been ill so long I have had to give up my situation as clerk and traveller, and my money has almost gone; what with doctor's fees and drugs, it has left me bare. If I had seen your book at the onset of my illness, I should have placed myself in your hands at once. I notice in your book that you have a Free Hospital. If, sir, you have a vacancy, how deeply indebted should I be to you if you could take me in! I am a young man, and with proper treatment now, I hope, please God, to be restored to health. I am able to get about, but cannot attend to business. A situation is open to me as soon as I get better. Mine is not confirmed diabetes, so the doctor says; but if I go on as I have been, under his treatment, I am sure it will be confirmed. How gladly would I do anything could I get in your Establishment! May I, therefore, ask the favour of your

reply, saying what you can do for me. A little timely treatment would perhaps be the means of restoring me to health."

(*Came and got well.*)

"I have been suffering for the last seven weeks from pain in my left hip, reaching down to my ankle, and which is called sciatica. It came on on the 1st of August, suddenly, and apparently without any cause, and has almost incapacitated me from walking. I have tried the Turkish bath ten times, but to little or no profit. My medical man has given me some medicine to take, and has applied two blisters to the parts affected. After all, I am little or no better. I have but little or no pain except in walking or moving. A brother clergyman called on me yesterday, and having heard of my complaint, brought me your 'Practical Hydropathy,' which I am reading with great interest. I am induced from your book to think that my illness is a slight attack of sciatica, brought on, I believe, from having come in too soon to my new house. Now I write to ask whether you will recommend me to go through a course of hydropathic system at your Establishment; and if so, have you now a vacancy? I have always been in good health until now, and even now my appetite is good, and my spirits all right; so much so that my friends when they come to see me think that there is not much the matter with me. I also sleep all night, but I cannot make use of the left leg in turning in bed. And I have found great benefit from bathing my leg in warm water, and bandaging it with flannel night and day."

"I have been urged very strongly by a friend who has witnessed great benefits received through the treatment adopted in your Establishment to try it in my own case. What that case is I will describe, and then ask you to be kind enough to say very candidly whether you think that there is reasonable expectation of my recovery. I am thirty-eight years of age, married, and have had a large family. I have been an abstainer from intoxicating drinks for years, and until within six years ago had fair average health, my only illnesses being bilious attacks. Six years ago I had what I thought to be an ordinary cold and cough, which has now become chronic, attended with great bodily weakness, and frequently heavy night sweats. I have been declared, after examination by several doctors, to be free of organic lung disease, and my present doctor says that my bronchial tubes are out of order. One eminent physician assured me that I should never be well in this country, the climate being against me, and this he said six years ago, unfortunately for me proving a true prophet. I may say, in conclusion, that since I fell ill six years ago I have never known what it is to be sound and strong. I am quite tired after a walk of two miles, whereas I could once walk twenty miles a day. There is also one matter to consider in giving me your opinion—I fear I should not be able to get away from business for more than two weeks, or three at the utmost."

(*Merchant, previous to coming a hopeless, suffering cripple.*)

"I have often thought of the Establishment since I left it, and of many I met there. I shall always think of it with gratitude for the benefits received, and of that estimable man, John Smedley, for whom I shall always entertain the deepest respect. What a source of happiness it must be to him to know how largely he has been instrumental in alleviating and removing pain and suffering, and restoring joy and gladness where anxiety, misery, and woe existed! May God in His great mercy grant him a long life to continue his usefulness!"

"Will you please send me one of your chest preservers. You sent me one about two years ago, and I believe it has been the saving of my life."

(*Got well.*)

"I have been suffering for seven months from severe prostration, arising from overwork of both body and mind; but think I am slowly regaining bodily strength and power of thought, but very little thinking brings on nervous pains in the head, from which I seldom at any time get more than two or three hours' sleep at most. My temper is very irritable, appetite good, but tongue always white; pulse moderately strong. Doctors say no organic disease. I am very melancholy and heartless often. Have not taken much medicine. Am forty years of age."

(*Case of Erysipelas. This would have been cured in a week by our treatment.*)

"I wish to know if you can do anything for me. About ten months since I had St. Anthony's fire very bad about the head and face. Was much swollen about the chin, and very hard. Doctor ordered me to have leeches put on to soften it. Had them put on, and have had a sort of running almost ever since. It is continually inflamed, and always more or less swollen; breaks into little pimples, almost black. Have had about four gatherings. All this is under the chin, on the left side. The least exposure makes it go hard and swell, and it is at present going hard under the left ear, as if it were going to gather again. Keep being broken out in little spots on the face. Have been taking sarsaparilla. When in bed, something like thin blood comes from the mouth. If I get thirsty, begin to have a nasty mouth, and spit something like blood; and something like little lumps of blood come, as it were, from the gums. I have tried several doctors, but to no good purpose."

(*Doctors' Victim Case.*)

"A friend has just lent me your 'Practical Hydropathy,' which I have read with much interest. It has struck me that your treatment might do me a great deal of good; although it is, of course, unlikely that anything will effectually restore me to my wonted vigour and health. But I will describe. Some nine years ago (I was then about eighteen) I felt a growing weakness in my legs; but attributing it to my growing very fast during previous year, I did not much notice it, until things began to look serious, inasmuch as I could scarcely cleao the ground with my legs when walking. Of course, I consulted a doctor, whr gave me cod-liver oil; prescribed ease from labour, and generous diet. Growing worse, I consulted another surgeon, who gave me some mercurial ointment to rub into my armpits—in short attempted to salivate me. This went on a short time, and I gradually grew worse, until I could not walk at all. I then went to bed, and we called in a local surgeon, who examined my spine, which he pointed out was curving in too much, just at the "small" of my back, and, pressing upon the spinal cord, was causing the paralysis of the legs, &c. &c. He said I must lie on my back six or eight months upon boards or hard mattresses, which I did. At the end of seven months (my legs being totally useless all this time), not getting any better, I was admitted into the infirmary, where I laid five weeks. The surgeon (the late T. P. Teale, Esq.) prescribed a couple of caustic issues, accompanied with ergotine pills, &c. &c. I came out of the infirmary not any better in my legs, &c., and much weaker and poorlier than I had ever been before. After I had been at home a short time we procured a small galvanic apparatus, and applied it often to my spine and legs; and eventually the use began to return into my extremities, and I gradually improved until I got to walk about with the aid of crutches, which by-and-by were exchanged for two walking-sticks. In fact, I got so that I could walk a few yards by dint of great carefulness without either crutch or stick, and with the help of the latter, could walk a mile. If I had had at this time some of your stimulating and strengthening spinal applications, I verily believe I should have been entirely

restored. Unfortunately, at this time I had a relapse, from which I am still suffering. My powers of locomotion began again gradually to decline, and we again called in a doctor, who put in my spine two setons, and again gave me poisonous pills. He also advised me to get a pair of spinal stays, or corsets; which we got. But neither setons, pills, nor the spinal supports recovered me, and I have been for five or six years but just able to crawl say twenty or thirty yards, with the help of crutches. My paralysis extends from the loins downwards, and, of course, I have very little control over either motions or urine. The sympathetic nerves, or nerves of feeling, are not paralysed, and so I can feel when I want to go to stool, &c. &c., or I do not know what I should do. Last April I determined once more upon trying the Leeds Infirmary, and was again admitted inside. This time galvanism was prescribed, along with strychnine pills. This time I was in the Infirmary six weeks, and continued the treatment at home, afterwards for some weeks, without, however, any good results. I have been taking $\frac{1}{12}$th gr. every four hours. I gave up the pills some time since, as I thought they made me worse instead of better; and latterly I have begun to despair of ever becoming so that I may be useful in the world, not dreaming of ever being entirely recovered. I have had lots of blisters, strengthening plaisters, &c. &c., applied to my spine, but without producing any good effect. Now, sir, I have suffered considerably, physically and mentally, during the last nine years—for to a young man of ardent temperament even confinement alone is a great punishment, not to speak of the pain and inconvenience of disease in addition thereto. But I should be very glad to know, sir, what you think of my case—whether I should be likely to derive benefit from your treatment, and also what would be likely to be the cost of such treatment. The latter item is of the greater importance to me, because of the great loss we have just sustained in the death of our bread-winner, and we are by no means in affluent circumstances. Apologising for troubling you with the tedious history of my affliction, and somewhat anxiously awaiting your reply."

(*This gentleman came about a year since, a wreck, seriously injured in the neck and spine from steeple-chasing; and, as usual, blisters, &c., only aggravated his injuries. I had much doubt of restoring him, but he got thoroughly hearty, and met with a wife at the Establishment. Happy with a family.*)

"I was delighted to receive your kind note the other morning, as it gives me the greatest pleasure to hear from one I so much respect. Well do I remember your saying, the first time I saw you, 'Keep up your spirits, and you will have cause to bless the day you came to Matlock.' That prophecy has indeed proved true; as I am not only restored to excellent health under your wonderful treatment, but, at the same time, met with a good wife, and I have never been better or happier in my life. I do indeed join in the wish that dear Mr. —— would 'go and do likewise,' as I am sure he is too noble to live alone, and richly deserves an amiable lady for his companion. My wife joins me in kindest regards to Mrs. Smedley and yourself."

"This note will be handed to you by a good old friend of mine, our senior deacon. I have never forgotten your and Mrs. Smedley's kindness to me when first at Matlock. That week's treatment set me up for years, and how useful the knowledge acquired then has since been to me and others it would be hard to tell. I am thankful to say that at present I have very good health, and still stick to cold water within and without. By the way, you will remember Mr. ——. He had a very delicate stomach case, and you know what great care was required in relation to his treatment. Well, you will be glad to hear that I saw him in Huddersfield yesterday, and he looks quite hearty, and says he can eat anything; yet if ever a man bid fair for an early decline he did. He attributed his material welfare to the treatment at Matlock."

"Having for some time been a very great sufferer, and having tried two physicians, besides ordinary medical men, I find myself much worse under their treatment. I am determined to try your system, having read your book. Will you kindly send me two of your body-bandages, with spongio compress? and if I fail myself, I must try and get a short time to your Establishment."

(Case got quite well.)

"I was recommended to write to you respecting my illness by a gentleman who had received much benefit from you some years ago. I am nearly thirty-three years of age, and in a small way of business. The last four months I have been very unwell with my head, quite unable to walk straight. Pain on my brain, and all round my head and forehead a tightness. My eyes heavy, and a floating of black spots as I move them. The spots appear to be connected with a cluster of fine and thick streaks. I have had my face during the illness (now more slightly) with lots of pimples. I was under a doctor, who could not do me any good, and who called in a physician, and strengthening medicine was given for a long time. I was ordered to drink brandy three times a day, bottled stout, beef tea, and good food. Take outdoor exercise. Have been sent away several times to the country and the seaside. I have improved much in my walk; still I cannot get rid of the black floating appearance about my eyes. They at times feel very full, and at times I have the tightness round my forehead. I still take stout and brandy, but my eyes have a glassy appearance, sometimes worse than others. I found the seaside and the country made me feel very different in health. I suffer from a pain in my left side and across my chest, which I have had these two years. I am told it is rheumatism. The time that I find myself most giddy is by looking downwards to my feet when walking. I have not taken any medicine this last three weeks. I am under the impression that my doctor thinks it is of no use any longer. I think there is a something which ought to be done in the place of medicine—probably leave the place and get outdoor air. I am stouter and stronger now than I was, but cannot get my eyes right with the black specks. The physician that attended me said I had congestion of the brain."

(Doctors' absurd professional treatment.)

"I am, by the instructions of a doctor taking a mustard emetic every fourteen days for a very sluggish liver, which has not acted as it should for a long time, which has caused me a great deal of illness; and the punishment the emetic inflicts I do not like; and preferring your treatment to any other, should I be asking too great a favour of you to instruct me how to act in this case. By doing this you would be conferring a great favour on a lifetime teetotaler."

(Case came and got well.)

"I take the liberty of writing to you—having been advised to do so by a gentleman I met at the railway station on my way to the hospital—to ask you if you have a Free Hospital (which he thought you had) and if so, if there is any prospect of my being able to avail myself of the charity. I am suffering from rheumatism in my back, knees, feet, arms, and hands. I cannot walk without crutches, and then in great pain; and I cannot lift a cup to my mouth without using both hands. I have been under several well-known doctors in London with it, and they have all made me worse instead of better. I have been nine months under treatment at one hospital, and seven months at another, and still no better. I have not been able to work for more than twelve months, and for two years before that to do but very little. I had saved a little money, but the doctors have had it all now, and my wife is obliged to go to service, but I am allowed to be with her. I am glad to do anything, and apply anywhere to get relief. The gentleman told me that if you had such a place, and I was able to

get there, he was sure you would be able to cure me. I told him I would find a means of getting there, therefore I take this liberty of writing to you, hoping that if I have committed any offence you will forgive me."

(*Came and recovered.*)

"I take the liberty to write you with respect to my son's health, to see if you think there is any chance of his recovery, after the various symptoms given below. I may mention that his complaint is consumption. He commenced with a slight cough, about fifteen months ago. After trying simple remedies myself, finding he got no better, but weaker, he sought the advice of a physician of this town, who gave him some medicine, but did him little good. He afterwards attended Dr. ——, who said his lungs were very weak. He gave him some medicine, but to very little effect. He afterwards had, and still has, the advice of Dr. ——, who says he is in a consumption. His age is twenty-one years. His symptoms are as follows—great weakness, with cough and expectoration, hoarse voice, great pain in bowels and chest, with occasional headache and weak sight."

(*Came and got well.*)

"I have just finished reading your 'Practical Hydropathy,' which a friend handed me the other day. It does seem to me as if I have now found out the man who has the heart and possesses the means to relieve suffering humanity. It appears strange that your hand-book should only at this late time of day have met my eye. Confidence in one's physician is half the cure, 'tis said; and I shall lose no time, should your reply lead me to anticipate complete convalescence, in placing myself under your treatment. I want to, and briefly, speak of the props that have given way, and will thank you to say, by an early post, if I may hope to regain my former giant strength and buoyant spirits if I place myself under your care. I look healthy enough—am neither lean nor cadaverous. I appear to my friends to be in the enjoyment of excellent health. Youth is proud of its strength, you know; and it pleases me to have them believe I am as they are, hale and hearty. I tell them I am in for cleaning the Augean stables when my lame foot gets better—this same foot, by the way, I make little of to them, but when alone, my spirits plump down to zero when I think that nearly a twelve-month has elapsed, and my Asahel spring is as far from me as when I first put myself under allopathic anti-hydropathic treatment. As I am resolved to get well and herculeanly strong, I have determined to hide none of my skeletons from you. First, about twelve years ago I began to be troubled with dreams. These have continued to torment me ever since; never less than once a week, frequently four or five times a week. Second, within the past seven years I have had several very severe rheumatic attacks, once rheumatic fever, which confined me to bed for eight months. Third, one of these left an adhesion, I suppose from lymph deposit or pigment, between the iris and the capsule of the crystalline lens. To remove this adhesion I have taken potass three times a day for months and atropined my eyes for the same time. The pigment still remains; and whenever I am caught in a draught or feel cold the vision gets hazy. An hour or so's reading is apt to strain the eye, too, and induce inflammatory action in that organ. Fourth, I had to superintend the erection of several buildings, and at the same time to superintend and conduct the operation of a very large drapery concern in the city, which obliged me to be on foot from eight, sometimes earlier, in the morning till eleven and twelve at night, ay, sometimes till one and two of the following morning. This overwork did make me thin and cadaverous-looking. My feet got dreadfully inflamed, and became very painful. The muscles, tendons, and I thought the very bones, became chronically affected. Gradually my shoulder, one hip-joint, chest, and back, became similarly affected, until I was unable to

move a muscle without acute suffering. Latterly I had to be assisted to and from business. Four months are gone, and I am still far, very far, from being able to resume work. Fifth, I am constipated, and have been so for years."

(Case got well.)

"Having seen one of your valuable books on 'Hydropathy,' I hope you will pardon me for applying to you for advice, as I have now been ill for eighteen months, and incapable of working for fifteen months. I have been under five doctors, but all to no use. I will give a short outline of my case. For about three months before I gave up work I did not feel well; I was plagued with a pain in my left side, just under the lowest rib, and my strength failing me, I went to a Dr. ——; he said it was nothing but cold, and that I should soon be right. I was under him two months, and was no better, but worse of the two. I next tried a Dr. ——; he said it was weakness of the heart. So long as I took his physic I was worse, and when I gave over taking it I felt better. I next tried another, and he said it was water that had got mixed with the blood. Another doctor, whom I have been under ten weeks, says it is weakness of the digestive organs; and I was ten weeks taking quinine bitters, but was not better for it. I was compelled to go to another a fortnight ago, on account of my sick club, and he said it was tubercular disease of the lungs. He gave me some physic, but I won't take, as I feel as well without it as with it, and I have took it while I am weary. I am very much plagued with a pain in left side, and in my stomach at times, and acidity, and my meat often turns sour on my stomach; my bowels are not regular, as they should be; I have a pain under my right shoulder, and I feel as if I should faint at times. I have not any cough, nor don't feel any difficulty in breathing, but I am very weak, and have lost about 25 lbs. in weight since I gave up work. I have a wife and two children, and mother, and am only a working man (when able); and if you can give me any advice I shall be thankful, and glad to act upon it, for from what I hear it seems the most natural."

(Case could have been easily cured by our treatment.)

"We have a sad instance of how little wealth can really do in the death of Mr. ——, who was once at your Establishment. His parents live near us, and we have been to see them this morning. He was their only child, and had married, four years ago, a young lady with equal wealth; so that they scarcely knew what to do with their money. He began to be ill about four months ago, with stiff neck. Afterwards it was much swollen; after that lock-jaw. They had several doctors, first allopathic then homœopathic, and a Dr. ——, from London, who came and stayed one night, for which they paid him one hundred guineas. They also consulted Dr. —— and Sir William ——, but they did not come to see him. After that they took him in an invalid carriage to Scarborough, and the doctor there was the first to tell him there was any danger, and he lived one week after his arrival. He was brought home and buried with much pomp, and everybody is very sorry for his parents. His wife—poor thing—has two little children, and is expecting a third. She is only twenty-four, and he was twenty-nine, taken away from all that heart could desire. When we came home we asked his mother why she did not send him at once to Matlock. She had no good reason to give us. People won't learn, and now he is gone it is no use saying anything to them."

"It is just a month yesterday since I left you and arrived home. I am most thankful to God in the first place that ever I was directed to apply to you for relief, and to you for the means used to give that relief. I have a sitz bath every day, between seventy and eighty degrees, spinal rubbing, and cold pouring. I

likewise have a sponge over on rising, and frequently the hands and feet in mustard before going to bed, and still continue to bandage the ankles."

"I write these few lines thanking you for so kindly entertaining myself and friends on Wednesday, the 2nd of August. We were highly delighted with what we saw. I had not much time to converse with you, and I thought I would just write to you and inform you that we are great advocates of your treatment. We have used it for about six years this summer. I think it is six years since we brought one of our little girls to your Establishment, but was told she was too young to be taken in, but was told if we wrote to Mrs. Smedley she would give us all the information we required. My wife wrote and told Mrs. Smedley the full particulars. She answered her letter, sent her a book, and told her to treat her for incipient consumption. Mrs. Barnes at the bath assisted my wife with the little one. She is now as strong a girl as any we have. The book has been lent to many, and has been of great service to them, and we have recommended your books and procured them for friends. We have never taken any medicine since the time I name, and we have a family of seven children. During the time they have all had the scarlet fever; after that one had the small-pox, and she is not marked at all; and last summer Mrs. J. had the scarlet fever, but we used the bandages and packs, and have never required medicines. I thought those little matters explained to you might be of some little service to you. I have got one very particular case to tell you. A cousin of mine was very dangerously ill. I called to see her. It is four years this September since she was ill of the typhus fever. The doctor had given her up, also the physician. They were holding a glass before her to see if she breathed when I entered the room. I asked if all had been done that could be; they said 'yes, there was no hope left.' I asked were they willing to try my way; they said, 'Oh yes, anything' —for she was the mother of nine dear little children. We got hot blankets, hot bricks, with calico dipped in mustard and water, and packed her the best way we could—for one poor foot was dead, and she quite insensible. In about three-quarters of an hour she began to draw very heavy breaths, and at last spoke, and said, 'Cousin, is that you? They are burning me.' I said, 'That's right, I want you to feel;' and from that time she gradually recovered. When the doctor came in two or three hours' time, expecting to find she had departed this life, he appeared as if he could not believe us. He said, 'Mr. Johnson, you ought to have been a doctor.' She was four months before she could get out—for she still continued with the doctor's prescriptions. She has been confined twice since then, and is likely for another. She always says when she sees me, 'Cousin, you saved my life.' I must also tell you that a piece of dead flesh came out of the foot that was dead; that foot has never been thoroughly well since. I can assure you my cousin is a miracle. I, with Mrs. J. and our friends from Hull, thank you for your kindness to us, also Mrs. Smedley for her advice in times past."

(*Case of a General in the Army given up for Abscesses of the Liver, and in a general desperate state, from long residence in India. Got thoroughly well.*)

"I have to thank you very much for your kind and interesting letter of the 14th, and also for the useful and valuable books. My wife also joins me in thanking you for your very hospitable invitation to Riber Castle, and which, when opportunity offers, we shall gladly take advantage of, as it will afford us both leisure and pleasure in renewing our acquaintance with you and Mrs. Smedley, of whom we must always retain a grateful remembrance. You seem yearly to be widening your sphere for benefiting your fellow-creatures. Owing to our having been travelling, your kind inquiries did not reach me so early as they otherwise would have done. Many thanks for the kind interest you have shown in my fate. I came home just a year ago, not on account of my health

this time, I am thankful to say. Indeed, I am thankful to say, with gratitude, you did wonders for me."

(General —— applied to me for Sciatica of long standing, and which had crippled him so that he could not straighten the leg, in fact, the hip-joint was out, from the inflammation. He got quite well, and now remains so, five years from this date.)

"I must send a line to wish to you and Mrs. Smedley, and to all connected with you in your work, every blessing of the season of peace, and many happy years. I conclude that you are as busy as ever; and I trust that everything is going on satisfactorily. I am able to get on very well, and can walk and ride sufficiently for all purposes. I do not think that weather affects me at all. I am thankful to be so well." Again he writes as follows: "I am thankful to say that I continue well. I was out in the bitter east wind yesterday, at some experiments, from 9.30 to 6.0 p.m., standing and walking all the time, and am not any the worse; so I think that I may say that I have got rid of my enemy. I met Colonel —— here yesterday, and he said he was wonderfully well, and that he was entirely indebted to your treatment. I have often wished that the Princess could have the benefit of Mrs. Smedley's advice. I beg my kind remembrances to her." After his visit to our Institution, he writes as follows: "I write simply to inform you of my continued improvement. I am now capable of doing a great deal of work, and have gained ten pounds in weight since leaving Matlock. Thanks for all your kindness."

"I cannot leave Matlock Bank without briefly acquainting you with the occasion of my coming, nor without expressing my deep obligations for the successful results which have been achieved. For months I had constipation of the bowels, pain at the stomach, loss of appetite, and increasing general debility. On calling in our medical attendant, and after careful examination, he told me my stomach was in a state of chronic congestion and inflammation, superinduced by overwork, and that nothing but the entire abandonment of all business, public and private, for a time would restore me. I was obliged to consult an eminent physician in London, who also examined me, and told me the same thing. I subjected myself to his treatment, took medicines, and the result was a gradual loss of life power, without any mitigation of the pain. I was also examined by another physician, with the same result; the concurrent testimony of all being that, by an entire change, rest, and careful diet, I might hope to be well again in from six to twelve months. On the advice of a friend I came to you, a little more than six weeks ago, and I am glad to say that, at this moment, I feel better than I have done for twelve months, appetite is restored, the pain has disappeared, and the elasticity of health, to which I have been so long a stranger, has come back again, so that your treatment in six weeks has realised all the doctors hoped for in from six to twelve months, without deluging the system with medicine, or impairing the functions by any of the usual appliances provided in such cases. I came without any knowledge of your treatment. I go away with wonder that the virtues of your remedial agents are not more widely known, and with the firm conviction that such treatment, if generally adopted, would save human life to an incalculable extent, although it might deprive society of one-half of the medical profession, and leave the remainder only half employment. Above all, I thank God I came here; and should I find the strength gained requires to be consolidated, or should I need further rest and change, I shall return with hope and confidence, and also with the feeling that in your Establishment I have found a second home. In conclusion, I can only pray the good Father to continue the life of yourself and your dear wife—lives so valuable—and to continue to add His blessing to the sacred and important work, Christ-like as it is, in which you are engaged. I remain, yours very truly, ——"

(The following Case—a Professor, broken down under mental work—got quite well.)

"I wrote you this morning at length, but I forgot to say that I am at present suffering from another acute attack of mental and physical depression. Is there no danger of my being struck down in one of these attacks, or do you think I will recuperate sufficiently until I can throw them off? Will you excuse these additional queries; but I address you as a dear friend. How can I procure sleep? It has left me, and of course this brings me down. I am profoundly grateful for all your kind and affectionate treatment of me, and pray that God's blessing may attend you and yours in all your relations of life. You know how horribly nervous I am, and how I am haunted with all manner of dreadful apprehensions. Perhaps you will kindly indulge me so far as to let me hear from you regarding the following thoughts that I entertain. My great fear is lest my reason gives way in the struggle; and I am haunted by thoughts of an asylum and lunacy. I am so dreadful low-spirited and despondent. At times, too, a morbid excitement comes over me, generally accompanied by a creeping kind of sensation over the left eye, which gradually finds its way nearly to the middle of my head; it is not a pain, but a feeling under the influence of which I fear lest I should do damage to myself: there is such an impulse, but hitherto I have been able to control it, and I trust God will still give me strength to bear up against it. Are these feelings peculiar to me, or have you and all such patients felt the same? I am sad and low, and often much discouraged; but God is good, and may yet restore me. But you must know as well as I how much a kind and encouraging word does me good. Still, on these points to which I have referred I earnestly solicit your candid reply, will you so far favour me? I forgot to say my sleeplessness is as bad as ever." After his last visit to our Institution, he writes as follows: "I write simply to inform you of my continued improvement. I am now capable of doing a great deal of work, and have gained ten pounds in weight since leaving Matlock. Thanks for all your kindness."

(This letter is from one of our bath-men, sent to the Case, at the request of a friend in England, who wrote to ask me if there was any hope of cure. It was a Case of Bilious Fever, given up by two M.D.s. My man cured him in three weeks perfectly, to the great joy of himself, his wife, and family.)

"Paris, April, 1864.

"I write to inform you of Mr. M——'s case; he is very much troubled with bile at stomach. I have given him 48, 49, one foment pack 46, and also mustard plaister, and sitz baths. He takes them very well, all but the mustard plaisters, and those he cannot bear, his skin is tender; but we have put meal in the mustard, and he is a little better. We shall cure him, I have no doubt. One of the doctors is pleased; and he has looked at our things, and he is going to take me through his hospital. I am not mixed up with them at all, neither shall I. I will write again to you on Tuesday. Dear sir, this is quite a treat to me. I never saw anything like it before—men at work all day on Sunday."

(From the Brother of a Bishop.)

"We still continue, through God's mercy, and the use of the simple and rational means I learned while with you, strong and well. My children are unusually fine and strong. I was too long under the drug system in India to be ever the man I ought to have been. Fevers, malarias, &c., got the doctors into my house, and I never got rid of them till I came to Matlock; since then not one single dose of medicine has ever entered my house (to say nothing of my stomach), and never shall, if I can help it. I distribute bandages, &c. &c., with the best effect among the poor; and your plans have borne good fruit in very many places where you know nothing about it. Not a few cases of alleviation I could point to; but drugs, dirt, and drink often carry the day."

(*Saved amputation.*)

"DEAR MRS. SMEDLEY,—A day or two since I sent you a brace of pheasants and a hare, fully hoping to write you a few lines with them. I trust they have reached you safely. I think you and Mr. Smedley will gladly receive a very good account of my dear son. His recovery has been, I believe, in answer to many prayers, and Mr. Smedley's treatment has been accompanied with God's blessing. My son can now enjoy the recreation of shooting and fishing."

The following is the patient's statement of his case:—"January, 1862. Felt pain in knee-joint, with immediate stiffness. Walked about and played cricket, &c. Then (1862) out at ——, under the surgeon of my regiment, Dr. ——, used lotions, iodine, blisters periodically, and leeches once. Took lime-juice, iodide, potass, &c. &c. Went on in this lame state till May, 1863. Sent home to England by Medical Board. Saw surgeons in ——. Said I had inflammation of sinorial membrane of knee-joint, and thickening. I had also a little lump, like a pea, on or about the ligament on inner side of the knee—query whether detached cartilage or otherwise. Ordered by —— into knee-splints for three months, total rest, and no pressure on knee, at the end of which time was very stiff in joint (the knee had swelled and become hot in the last year); had fomentations occasionally. Went to —— for waters and baths five weeks, and shampooing; hardly walked at all, keeping very quiet. Also went to —— for a course of water-cure, to —— for hot sulphur baths, and drinking the hot water also; considerable hot douching with force on knee; was there about three months at this course. In 1865 was at ——, under Dr. ——, for his system of plaistering, &c., three months; also had tried some of —— hot baths in ——, having a galvanic shock to leg when in them. After two years and more of doctoring and laying up, in September, 1865, I rejoined my regiment at ——. Knee rather swelled, a little weak, and only partial action in joint, which had been the case from the first. Used common plaister for support; got on fairly, but had a bad fall, horse slipping up and falling on top of me, greatly bruising bad leg, and crushing some toes and spraining ankle badly. In 1866 unable to move for three weeks. Returned from —— to England November, 1866. On landing in ——, May, 1867, fell down on a slippery wharf and broke thigh bone of bad leg. Set by Dr. ——, and in splints for two months. After another month, returned to England; leg swollen. So weak that I had lost all muscular power. Unable to lift or guide my leg, and knee-joint stiff and so very tender, and sensitive to slightest movement. Placed in 'Liston' splint daily, and screwed up to a certain angle. Limb moved also, or worked, by doctor slightly, and once severely under chloroform, later on. I, when able to leave my bed and room, used to sit some time during the day with my leg over a bar, by way of flexing, &c. &c. Had hot douching to knee, gentle rubbing with oil, &c. After all these movements, it was decided by —— and others that my joint would not bear bending, owing to inflammation recurring. Tried for nine or ten months to get a stiff joint, by perfect rest to joint and using knee-splints, tightly bandaged on. This, in March, 1869, was found to be a failure, and amputation was proposed by two of the most eminent London surgeons. Never felt pain in the knee as regards aching, only quite at first. Always felt a tenderness on inner edge of joint. My leg was not well set, thereby causing a shortening of about two inches. Have not walked for two years."

(*From a Clergyman in Sydney, Australia.*)

"On the 4th instant I received the box and its contents which you kindly sent me, all in good keeping, and quite as fresh as when they left your Institution. Your letter regarding them had reached me more than six months previously, to which I replied by return of post. I now write to thank you particularly for the 'Hydropathies' and 'Manuals.' They are, to us, worth

their weight in gold. We never saw the 'Manual' before; it is a great boon in a family. Mrs. Smedley's name will be handed down to posterity together with yours, and millions yet unborn will bless you both from their hearts. There is one fact which has come under my notice worthy of observation—that the wet body-bandage is a perfect preservative against 'fever and ague,' which is so prevalent in the northern districts of Australia. Neither youth nor strength can resist its attacks; but the application of one single article of your hydropathy fortifies the constitution completely against it. I can say the same also regarding sun-stroke. Every one, no matter of what age or strength, on going to a hot climate, should practice your hydropathy. It not only prevents, but it cures, when applied in time, the very worst attacks of both these dreadful maladies. But, of course, knowing, as you do, the principles of prevention and cure, none of these things are new to you."

(*This was a Case of Injury to the Spine and Brain, from a railway collision. The patient, a stout man, about fifty years of age, was, previous to coming to us, unable to put pen to paper, and scarcely able to converse, almost sleepless, and with a constant apprehension of imbecility. In a week he could sleep well, and write or converse as well as previous to his accident. We have had many cases of injury to the spine and brain, and it is marvellous how quickly our spinal treatment has restored them. Two of my present bath-men were quarrymen, had their spines injured by fall of stone, and could not walk. Both are now, and have been for years, perfectly sound.*)

"My dear Mr. Smedley,—As I shall most probably be leaving your Establishment in the course of a few days, I feel I cannot depart without offering you my most sincere thanks for the kind attention I have received here. When I call to mind my state of health at the time I came to Matlock—which is, I believe, little more than six weeks ago—I feel astonished at the change made in my thin poor body and feeble mind. You will no doubt remember how I complained of my back and head, and that I could not sleep, either by night or day; but now, thank God, I can enjoy my rest at night, and I feel myself on the way to my usual health and strength. With every feeling of gratitude, believe me to remain, my dear Mr. Smedley, yours very sincerely, ——"

(*This gentleman was in a collision on the railway, spine and brain injured, and after six months under doctors, losing his reason, came, and was perfectly restored.*)

"My Dear Mr. Smedley,—You will be pleased to know that my daughter is quite well again. Her visit to Matlock Bank Establishment, although only for three weeks, has done wonders. I am thankful to say that I am much better than I ever expected to be, thanks to your kind attention to me. I am anxiously looking forward to the time when I shall be able to run down for a little treatment. I often meet with some one who has received benefit at your Establishment; but I have not heard how Mrs. Smedley is since her return home, and should be very glad if you would send me just one line to say how you both are. My son Willie desires to be kindly remembered to you. He often speaks of his friends at Matlock, and wishes he was there. With our united kind regards, I am, my dear Mr. Smedley, yours, with much gratitude."

(*The following case was a success under our treatment.*)

"I have only followed your kind advice to a very limited extent, though I intend following it more fully in other respects, as far as possible, as already I feel the beneficial effects of your mild treatment on the nutritive organs and nervous system generally. I am thankful for my visit to your Establishment, though it was only a short one, as I believe I am now in possession of an agency for the physical restoration of many to whom I have tried to bring home the

principles of the Gospel, and that the one may efficiently aid the other. May I trouble you, dear sir, for a little advice in reference to my own mother's illness? Her case is a peculiar one, and briefly as follows:—When a girl she sprained her right knee, and fourteen years ago became lame through rheumatic affection lodging in the weak knee. She has not been able to walk at all, all that time, and in consequence has grown very stout. The leg is now contracted, and the knee *very much* swollen. A few years ago a celebrated allopath saw it, and wished her to go to the Birmingham Hospital, where she had the kind attention of the best doctors, but they could not reduce the size of knee, any further than it naturally reduces from continued rest in bed, and said the bone was enlarged. After two months, she came home, no better, and pronounced incurable. Last week Dr. Oliver Pemberton called, and says the knee is no larger than when he saw it years ago, expressing his surprise that the nutritive organs had acted so long. He recommends use of rhubarb internally for bowels, and still says it is incurable. Do you think any danger would attend the use of your crisis bandages? One or two doctors have cautioned her against getting any sore on the knee, but I think possibly a crisis there would relieve the system generally of rheumatic pains, though I am afraid to recommend an endeavour to produce one without consulting you. Latterly she complains of coldness in the spine and bowels, and has a cough, but is naturally of a very strong constitution. Her age is forty-nine, and power of reaction generally good. Since commencing this I have had to desist, from a great oppression on the upper part of the head, causing temporary dimness of sight, almost to blindness. I have tried several of your remedies, and found a little relief. Will you kindly recommend me the most suitable treatment, and also say how long I am to wear the body, spinal, and chest compresses?"

(*Ruined Case by Doctors' Quackery.*)

"Have for two years past been suffering from ill health, with a gradual wasting away of flesh, during which period I have been under four different doctors, all of whom have treated me for different complaints—viz., consumption, liver complaint, and general debility—but always, on examining my lungs, could find nothing the matter with them. During the whole of 1870 I could get no proper rest, on account of the most acute pains in my arms and legs, flatulence, with shortness of breath, &c. Finding no benefit from the treatment I was then receiving, I changed my doctor, who commenced at once to give me sleeping pills, and to put me through what he termed a regular course of treatment. That was in February this year. I felt somewhat better for his treatment, which I continued up to June, when he considered a change of air would quite restore me, notwithstanding that at that time I had a great pain in my back, and was making a great quantity of water. However, he advised me to go to Plymouth, and try sea-bathing. On arriving at Plymouth I was at once attacked with diarrhœa, which continued on me the whole of the summer. About two months since that stopped, and I found myself increasing in size about the belly, breath shorter, greater difficulty in walking, and feet and legs swelling. I then consulted Dr. ——, of this town, who, on examining my water, told me I was suffering from disease of the kidneys, that albumen was escaping into the water, and dropsy setting in; that he could give me no medicine, and that he could see no hope for me, but wished me to have other opinions. I then called in Dr. ——, who gave the same opinion as to the complaint, but commenced to give me tonic medicines. I was now got so weak I had to stop away from my office. I may here state that I continued to perform my duties, but with great difficulty, up to a month since, and during which time by the orders of the doctor. Since being in bed I have had the advice of Dr. ——, of ——, who considers I might recover, and recommends baths to get the water away; but try what I will I cannot sweat, and find myself getting no better. I wish

to ask you candidly whether you think, by coming to your Establishment and going under your treatment, you can hold out any hopes of my recovery. The enlargement is confined to the abdomen, and feet and ankles slightly enlarged, which increases with the least exertion. I suffer most from wind and weakness, and get little or no sleep. My age is thirty-six."

"Auckland, New Zealand.

"I write these few lines to let you know I received one of Mr. Smedley's books by the March mail, and six of Mrs. Smedley's a week after. I do feel very thankful to you for your kindness in sending them. I have got rid of them all. Persons are very anxious to have them. They think them the best books they ever saw. My husband feels great benefit from the use of the baths. We recommend them as much as we can. I have only one ladies' book left, between myself and another person. I do wish there was an establishment in New Zealand. You will please accept of our many thanks and best wishes."—From George and Elizabeth Squirrell, Edmund Street, Queen Street, Auckland.

(*Doctors' Victims.*)

"I wish to bring before you the case of a young man who, after undergoing some months of treatment in the North Staffordshire Infirmary, has at length been told he can never more hope to earn a livelihood; but having a wife and two children dependent on him, it seems a very hard matter to altogether abandon hope. Through reading your Manual he thinks your treatment would be beneficial to him, and he has asked me to write for your opinion. He is altogether dependent on what his wife can earn. When his illness first began his club doctor treated him for indigestion, but after a time feeling dissatisfied, he went to another doctor, who told him the treatment was altogether wrong, as it was his nerves which were affected, and this one relieved his pain in a great measure; but at length he went to the infirmary, where they told him it was paralysis, and I suppose it is, for it is difficult for him to walk, and the lower part of his body and legs seem numbed. In going up-stairs he is not conscious if he loses his slipper.'

(*Student broken down.*)

"It must seem to you that I have forgotten your very great kindness towards me, and the pleasant time I spent at your Establishment. I hope you will not think so. Although my conduct does seem inexcusable, it will perhaps slightly extenuate my guilt, when I say that my visit to Derbyshire has often been the subject of my thoughts, always with the feeling of the deepest gratitude to you for the disinterested liberality I so happily met with. I believe it will furnish in after years, if I am spared alive, one of the most pleasant retrospects of my life. I am able to relate the most favourable results of the application of your system to myself. Nearly a fortnight after my return home from my stay with you I was seized with a bad sore throat. I think I told you I have always been subject to them from a very tender age. I consulted your book, and after deliberation on the various remedies you prescribe, and their suitableness to the symptoms in my case, I decided on three things, which, I am happy to say, proved successful. I took a wet napkin and put it round my throat, with flannel over, abstained from meat, and drank several tumblers of cold water in the course of the day, On the sixth morning after I began to apply these remedies I was considerably better, by the next day nearly well, and soon quite well. It is gratifying to me. and I think it will be to you when you hear it, because now I have had personal proof of the power of Hydropathy. And moreover, I hardly gave it a fair trial then, because, for the first few days I did not re-wet the napkin as often as I think I ought to have done. Afterwards I was more particular, and put it on

fresh about every half hour. I may add that it was cured in less than the time before that, so that it proved that your means were as speedy without the use of iodine, or such-like things, and more effectual, because my throat was better afterwards than it had been for some time previous to my sore throat, and the external swelling, which I had in vain tried to cure by the doctor's help, has considerably subsided. For all these things I have to thank you, which I do most fervently with all my heart. I have been more particular in my diet, eating much less than I used to do, and considerably less meat, in fact, I am in doubt whether I ought to eat any at all."

(*Case got well.*)

"Please excuse the liberty I take in asking your candid opinion upon my case I am now suffering from a cancer in the rectum, unassailable *outside*. I should like to know whether you have treated upon a similar case, and with what result. If you would kindly oblige me with the same, I may be induced to place myself under your skill."

(*From our Chaplain.*)

"You was pleased some time since to say, through Miss Gibbins, that you would be pleased to hear of instances of encouragement in connection with the Establishment. It is with pleasure that I send you the following:—Some time ago a plain Christian man from Glossop was at the Establishment, and told me of his having been useful to a gentleman staying there. He says, 'I talked with the gentleman earnestly about religion, but he gave little attention at first. Some time after, when lying on his deathbed at home, he would have me sent for, though many miles away; I went, and was the means of his obtaining that light and comfort which cheered him as he passed through the valley of the shadow of death.' He read me a letter from the friends of the departed, stating how much they were obliged to me for my attention. On the 9th of this month, when dining with the members of the Congregational Union, I was seated near to a gentleman from the South of England. He entered into conversation with me, and we were soon so much at home with each other that he said, 'May I ask where you come from?' I replied, 'From Matlock.' 'From Matlock!' he exclaimed. He then said, 'Do you know Mr. and Mrs. Smedley?' 'Yes,' I said; 'I often see them.' He then said, 'I am thankful to God for them. Some time ago I was so affected with rheumatism that I could not leave my room. I determined to go thither, but I could not be removed. I obtained one of their books, followed out the directions, and was soon restored to health. I told,' he says, 'my son, who is a medical man, and he said I could not have done better. Not only so, but I afterwards cured a young man as much afflicted as myself. The next time you see them,' the gentleman added, 'will you mention this circumstance to them.' 'Come,' I replied, 'and tender your own thanks.' He said, 'I hope to do so some time.' My third instance is better still. In mentioning it, I do think that at present it must be kept from others, or at least till I can know more about it. I was in the saloon on Monday morning; a young man came to me and said, 'Sir, I want to speak to you alone.' Upon going to a suitable place, he said, 'Sir, there are five of us who have solemnly engaged to seek the Saviour, and in every way possible to devote ourselves to His glory. We have drawn up a document to that effect, and we wish you to see us sign it.' The five were soon before me. They signed the paper, with great seriousness and excited feeling. I asked no questions then, but simply said, after fixing my name as witness, 'Let us pray,' and then in a few words I entreated God to bless them. They are two young men and three young women. What led them to take this step I have not as yet inquired, but you may feel assured I shall not lose sight of them."

(*Case of the Rev. ——. Got quite well with us.*)

"In the autumn of 1862 I experienced a good deal from pressure on the brain, in consequence of a continuance of severe family bereavements; followed in the winter by an attack of lumbago, with hysterical symptoms. Being at Malvern at the time, I was treated hydropathically by Dr. Horace Johnson, and seemed comparatively set up. In the autumn of 1866 (or 1867), I was thrown violently from a horse and severely shaken, but still continued my duties. I had, however, periodical attacks of giddiness, and wasted so much that by the end of 1868 I had lost more than a stone in weight. I still continued to get thinner during 1869; and after long and exhausting labours and anxieties, went for a tour, chiefly pedestrian, in South Wales. There I had weekly attacks of giddiness and sickness, accompanied with constipation, from each of which I rallied, and resumed my work. On returning to Saltley, in September, after a series of speeches and sermons, another attack occurred, which confined me to my bed for several days. I got better from this, and was allowed by my physician to go for quiet and change of air to some friends at Kilsby. I was under homœopathic treatment. A series of attacks followed, under which I grew more and more exhausted, till the attempt to walk round my bedroom brought on an attack of prostration for twenty hours. In that weak state, on a stormy night in November, I caught pleuro-pneumonia, and during the inflammation ruptured a small vessel, which bled for a fortnight, and was accompanied by profuse nightly perspirations. After this, with great attention to diet, I began to gain sufficient strength to leave my bed, and even to walk to the next room on crutches. My homœopathic physician then said I must have change of air, and at the end of December, 1869, I was thence removed to Malvern, all the little strength I had gained being more than exhausted by the effort. If the temperature of the room rose to 58°, I began to faint; if it fell to 48°, to shiver and sneeze. The voice of the bathman seemed to roll like thunder. The effort of walking from the bed to the sofa in the adjoining room on crutches left me exhausted for the day. To try to read a line in a book made the eyes swim, whilst at the same time there was great intolerance of light. When in this condition, Dr. —— was called in. His treatment was first rubbing down with a towel wrung out of water at 100° daily, and now and then a cradle lamp. The temperature of the water was gradually reduced as I gained strength. Then the sitz bath was used before noon, with a mustard foot-pan in the evening. An attack of rheumatism in March, 1870, brought on by venturing to take a short drive, and which rendered the left arm powerless, again threw me back for some time."

(*Vice-Admiral P——, age* 82.)

"I reached home on the 11th, and I am glad to say that I have been very little troubled with bronchitis since my return; but I had a most severe attack of neuralgia in the back two days after my arrival, and ever since I have put in force your instructions for that trouble, and I am happy to say that it is following the bronchitis. I look back with pleasure to my visit to Matlock Bank and Riber Castle; and with still warmer feelings for your kind, gentlemanly, and generous manner towards us. You are one of those through whom Providence sends blessings to men, and you from Providence have received your reward; for, as Dodsley says, 'There is no real blessing on earth without a good wife.' My niece joins in best and kind wishes to you and Mrs. Smedley."

"I have the pleasure to say that I am still continuing well since I left your excellent establishment. I shall ever speak well of and delightfully remember my stay at Matlock Bank. I take riding exercise daily on horseback, take less hours at business, and take as nearly as I can the same diet as when with you. I am going for a fortnight to Yarmouth or Lowestoft, but shall refrain from sea-bathing, as you recommend in your directions."

(*Doctors' Practice.*)

"Please pardon this intrusion; a friend of mine has given me your name. I met with an accident to my knee about twenty weeks ago; have had the best advice in this neighbourhood, and no result. I am still in bed. What would be your charge for some one to come and see me, to put me right? Being only a working man, I am anxious about expenses, and shall be thankful for your opinion as to whether anything can be done for me. The following is my case:—Pulling off a new boot injured cartilage of knee, or became loose. First application, painted three weeks, worse; second, forty leeches, better; third, bran poultice, better; fourth, leeched again, better; fifth, linseed poultices, worse; sixth, very strong blister, awful bad; seventh, blue ointment, two boxes plastered, worse; eighth, bandages three weeks, joint stiff; ninth, Scott's dressing and splint on five weeks, badly swelled; tenth, splint taken off, dressed with oil in the day, poison at night, no use of joint, worse again; eleventh, lint bandages, soaked in brandy, five days, worse, leg one-third larger; twelfth, neat's-foot oil, a little better; thirteenth, splintered up again, worse."

"A friend of mine, and a member of our Church, is, I expect, coming to be under your treatment, suffering from bronchitis and asthma. He expects to be at Matlock Bridge about 4.30 p.m. on Saturday afternoon. He cannot stay, I fear, longer than a week. I have felt anxious for him to come, even if only for a short time, having gained great benefit myself at different times. The last short time I was at Matlock did me considerable good. I am glad to say that my breathing is free, and *no cough*, though I have had to contend with heavy fogs this last week or more. My wife, who has been at Nottingham since she left Matlock Bank, reports she feels greatly benefited by the treatment under Mrs. Smedley."

(*From a Baronet and M.P.*)

"Hoping this letter may not be an intrusion on your very valuable time, permit me to thank you most gratefully for the very great kindness and extreme attention I received from you during my short stay in your most valuable philanthropic establishment. On the evening of my departure to London you will be pleased to hear that all my severe pains left me, and at this moment I feel as well as I ever did in my life. This to me is amazing; it convinces me that the principles on which you act, and the plans used for carrying them out, must be and are most correct. On Friday night only I arrived at your establishment, suffering the most acute and severe pains in my liver and right arm, from which I had suffered previously for more than a week, under a regular practitioner. I left your cure on Monday following at noon, and on that evening was quite well, though I had travelled by train to London. So satisfied am I of the correctness of your views and the efficiency of your establishment, that I shall always place myself under *your* care whenever sickness may overtake me. Permit me also to add that, from what I saw generally in your establishment, too much commendation cannot be given to your noble and single-minded efforts to relieve the sufferings of your fellow-creatures, and in rendering their lives happy and valuable, when otherwise, under drug administration, they would lead a life miserable to themselves and a painful and hopeless anxiety to their friends and relations. With an expression of my highest esteem for your philanthropy and kindness of heart, allow me to subscribe myself

"——"

"On the 9th of September, 1870, I entered your establishment, Matlock Bank, in a very weak and delicate state, having had an attack of dysentery, bilious fever, and congestion of the brain—for which, of course, I was treated allopathically. I had heard of your system of treatment from friends of my own,

who had been under your care, but, unfortunately, knew nothing of it experimentally. I think I could hardly have been weaker than when I entered your establishment, at six o'clock on that Friday evening. I at once received treatment from your head bathman, which produced a most wonderful change. I could not have believed that in a few days I could have felt so much better. I unfortunately could not remain more than three weeks, my work being of such a pressing nature. I had with me baths, stomach-can, &c., &c., for home treatment. Having engaged before my strength had properly returned in my official duties, which happened to be rather trying, I was taken ill in the month of November with typhoid fever, which I treated as directed in your book, which I had read with very great care. I need not say I very soon recovered, and, after a few weeks' complete rest, was quite able to resume my work; and, thank God, since then—except once, a few weeks ago, when I had an attack of dysentery, which with your treatment very soon abated—I have had grand health. I found your body-bandages and chest and spinal compresses and respirators of very great value. I thoroughly believe in your system. I have reasoned with the doctors out of your book, and find they must assent to the great principles you therein propound and demonstrate. My professional duties bring me very much in contact with the suffering and the diseased. I have frequently tried your remedies, and have always found them efficacious. I have succeeded in urging many of my friends to try your system, in getting some of them to go to Matlock. I regard your establishment as a great boon to the country. I only wish I could manage to get the time: I should spend a couple of months with you occasionally, as well for my health's sake as to get a more thorough acquaintance with the system of hydropathy, which I believe you have perfected."

(*A Case I prescribed for at home.*)

"Many thanks for your kind and prompt reply respecting the gentleman with broken bones in instep. He is progressing rapidly, and is now able to wear a cloth boot and place his foot on the ground. He is afraid of travelling so far as Matlock at present. The doctor had left him, and said he would get out next spring. With the hydropathic treatment, we promised to get him out in a fortnight. In all probability, he will by the time get out. The gentleman is very thankful for your kind reply and instructions, and I would again join him with my own thanks."

(*This is the Case of a wealthy man, supposed by the various doctors he had consulted to have heart disease, of which he might die any hour. He remains now—three years ago—perfectly well.*)

"I have had great reason to be grateful I visited your establishment. No day passes without some of your modes of treatment, which I take in my own house. I have not had, though much exposed, what is called a cold since I was at Matlock, which I attribute to *the mild water* treatment I acquired with you. My wife joins me in kind regards to you and Mrs. Smedley."

(*From an M.D.*)

"It is with much pleasure that I have received your letter, and I beg to thank you for the kind expressions contained in it with reference to myself. Having come to Malvern for a few weeks' tonic treatment, W—— invited me to spend the winter with him, and being taken ill immediately after I arrived, he placed his practice in my hands. I have now been here a month, and for the last fortnight have had sole charge of the establishment. The insight which I gained into your practice by my visit last year and this to Matlock (it being the third) has stood me in good stead, and I shall ever feel thankful and grateful for the opportunity which you afforded me. I have learnt to consider it as the best system of hydropathy."

(*Captain ——, now six years ago, is quite well.*)

"We are likely to embark for —— in a few days, and as I have left you now about six weeks, sufficient time has elapsed to enable me to judge what your skill has done in the way of restoring me to health. You will be glad to hear that I have improved very much, and am better now than I have been for many years, so much so that I have been encouraged to go out with the regiment, and see whether I can stand the hot weather out there, instead of selling out, and giving up my profession, as I should have been obliged to do if I had not received the benefit of your skill and knowledge. I think I may safely say that I can credit you with my recovery entirely, and I thank you very heartily for it. I know you have always plenty of business on hand, but I hope you will kindly spare me a few minutes to tell me if you or Mrs. Smedley have ever had under your charge ladies on whom black spots, exactly like bruises, come out in different parts of the body, arms, legs, in fact, anywhere. I am told they are signs of weakness; but as doctors are often so completely wrong, I should be much obliged if you would let me know if there is anything in addition to weakness in the body which causes them, and whether you have been successful in treating it, either by crisis or otherwise. A lady near here has been subject to these spots for three years; she finds that phosphoric acid sends them away, but as they come back, of course it is not a cure; and I think I could persuade her to come to you if you can report favourably on it." (*The lady came, and was cured.*)

(*This Case, Overworked Brain, got well at home with my advice.*)

"I take the liberty of addressing you, my dear husband being himself unwilling to do so; at the same time, I do so with his sanction. The subject being his health; and to come to the point at once, I ask of you to allow him into your establishment. He has been very ill for the last three months, quite unable to follow his daily occupations, with congested liver. We have done the best we could at home treatment, but our means are so extremely limited that we cannot do anything effectual, and my strength will not permit me to make the proper application."

(*Threatened apoplexy case, which any doctor's remedy would have killed, as they did in a similar case of a friend of mine I mention in this book. The cupping, leeches, and calomel, soon stopped life.*)

"My father has been very seriously ill with determination of blood to the head. We have been using your treatment, as far as we know it; but should feel greatly obliged if you would send us your special treatment for these cases. The attack first came on almost like apoplexy, for papa felt a sudden rush of blood to the head, and at once became insensible. Since then he has had two attacks, without losing his consciousness; but as they came on gradually, we warded them off by cold bathing to head and hot mustard and water to feet, &c. After the last attack he complains of feeling as though it would come on again, especially after meals. Thanks to the water system, he now seems likely to get over them, but is still in a state needing the greatest care and better treatment than we can prescribe."

(*Advice for the above case.*)

You did wrong in applying cold water to the head. (See special treatment in Bath List, "ALEPH," and go by that.) The primary cause of the attack is indigestion. Food has been taken, probably animal food, which could not be digested. (See Page 53 in my book.) Elderly or weakly persons should rather err on the side of starvation. Indigestion in these cases kills many; so abstain from animal food. Use simple farinaceous food, no medicine, or stimulants, or tobacco, no beef, nor any salted meat. Whenever legs and feet cold use 137 often, and use 233 in day, slightly sponged, and 168¾, 220 before and behind,

sprinkled with chillie paste in night, with thick flannel wrapper over all. Bandage must feel warm. Use 168¾ back, and small 220 over stomach, sprinkled with chillies in day for a few days; rub chillie paste over stomach and liver. Keep legs up, and covered with warm stockings and boots. You should come to the Institution; you may travel safely in a few days; although it is winter your life would be safer here.

(*Testimony.*)

"Will you kindly excuse me if you think my sending you a line or two out of place at this time? as it would scarcely seem right to me should I let the day pass without writing you. I certainly have nothing in particular to say to you but as you showed kindness to me when I really was in need of help—and it is ten years to-day since I went to your Free Hospital—so when each anniversary day comes it seems most proper to me not to let the day pass without just sending you my acknowledgments. I am thankful to the Giver of all good that, though I am not of the strongest in health, yet, by His blessing, I have not suffered from the disease (skin) I had when I went to Lea Mills Hospital first; thankful also for not having any doctors' medicine since, and I am sure it is with gratitude I always think of you in connection with the benefit I received at your place in the time of my need; and as these simple reasons are all I can offer in apology, I trust you will think me not far wrong in troubling you with this letter. So, daily wishing yourself and Mrs. Smedley may be wise and happy, and useful still, and that both are quite well at this time, and will be saved for ever, I am, dear sir, very respectfully your humble Servant, "——"

(*We have no difficulty in curing such cases as the following.*)

"Will you kindly give me advice per letter how to go on until I can arrange to come over and spend a few weeks at Matlock? My ailment is caused by over-work, anxiety. Last Christmas I had a slight attack of small-pox, which was attended with a good deal of fever, and left me very weak and shaky. I have been under eight doctors the last five years for stomach weakness and most obstinate constipation. I get no motion without aperients or enemata. The last doctor I consulted, Dr. ——, of Birmingham, wrote me about a fortnight ago. I enclose his letter. He tells me what they all tell me —'You will get all right.' But I don't. They tell me it is weak digestion, and consequent mal-nutrition and want of tone and power. I have taken every tonic medicine under the sun—iron, quinine, nux-vomica, &c., &c., alkalies, acids, &c., bismuth and blue pills, podophylline, &c.; all no use. I am taking pepsine now, and the diet, &c., recommended in Dr. ——'s letter (which please return). I feel blown out after meals, as if the food, instead of digesting and passing on, lays there and breeds wind and discomfort. I am troubled with specks, &c., floating before the eyes, eyes are weak. I have led a moral life, am unmarried, age thirty, occupation sedentary and *worriting*. I have had too many irons in the fire, am now learning wisdom by experience. I have a sitz-bath, sponge-bath, shower-bath. I generally have a cold sponge every morning. I can get a reaction everywhere except just in region of stomach. My friend, Dr. ——, of this town, told a friend of mine confidentially to-day, and I heard of it, that there is no disease in my case, simply want of tone in the organs."

"Having been the happy recipient of your great charity at Lea, and being considerably better when I left and by continuing the treatment at home, I am happy to tell you that by your treatment, with the blessing of God, I have been able to follow my employment some months, and wish to return my heartfelt thanks. I am also happy to tell you that by applying your treatment to several cases of fever I have cured all—one given up by the doctors after ten

weeks' treatment—and shall be much obliged if you will kindly send three copies of Mrs. Smedley's 'Manual.'"

"Sir,—I and a Christian brother in the providence of God met with your book on Hydropathy some two years ago, and we were very glad to have done so, and we have used the baths and bandages, and have found them excellent, and your mode of living and diet we fully concur in, both for health and the glory of God, as we have been total abstainers from alcoholic liquors for years; but it is very difficult to get people to believe in that which will be for their real good, much less to practise it. So now, sir, having found them so beneficial, we wish to return you our sincere thanks, and may the Lord abundantly bless you and yours, and your labours, spiritual and temporal, to the good of others."

"Dear Friend,—A friend in need is one indeed; and so I have found it from the benefit I have derived in so short a time, with such effective means, at your Hospital, and for which I return you grateful thanks for the same. I felt assured I should soon be relieved, for I could not sit up to take a cup of tea, the sitting position was so acute in the groin, and I was obliged to stand in the train from Darley Dale to Cromford Station on Saturday afternoon. Many have given thanks to you and the Giver of all Good that you have been set forth in so special a manner for the removing of maladies which would not have been done; and I may say in body and in soul, for many have come for the body only who have found one also for the cure of sin in the soul, and have gone away in their right mind. Thus man's extremity or bodily prostration has led to saving benefit. In his own wise purpose God has ordered the means, and the end has been answered."

Case showing how a fellow creature drifts into a state of disease from want of vital heat, which would easily have been supplied by our methods, and the case easily cured. The case is not hopeless even now, as we have cured many such, previously given up by the faculty; they have not, in fact, any means to comfort the suffering diseased organs.

"Sir,—I have been recommended, by a man who has been at your place for some ailment or other, to come to you and undergo your system, as he thinks you would be able to cure me; but before doing so, I think it would be better to give you a description of how I am. My doctor calls it consumption of the bowels. About three years ago I had the gastric fever (but previous to that I had enjoyed very good health, was very temperate in my habits, both in eating, drinking, and everything else, but a hard worker); but before I had got quite better I started working, and did not get my strength up. I worked for about a year on and off, as I could bear it, and then I caught a cold, which seemed to attack my bowels and the bronchial tubes. I had also a cough, which became very severe. At the commencement I parted with a little blood, but never since. I got a little better, and have been in a lingering condition these two years—not been able to work. I have been under the treatment of some of our best local doctors, but do not get any better, excepting so far as the cough, which has entirely ceased; nor do my lungs seem to ail anything, but my bowels have got weaker. About two months ago I felt a little better, and started working again, but about a month ago I broke right down again, and was obliged to take to my bed. There are three symptoms peculiar to the present attack that I never had before—my ankles, calves, and knees are swollen; I have also a severe pain on my right side, just under my lower ribs; and my tongue is red and rather sore at the tip, which has previously been white. I am extremely weak, and cannot stand above a minute, which might have been partly caused with a mustard and blistering plaister I have had on. My abdomen is full, round, and rather hard. I go to stool five or six times within the twenty-four hours. I cannot eat much. Be kind enough to give me an answer at your earliest convenience, as to what you think about it."

Such a case as the following in the first place would have been arrested by our simple treatment, and quickly cured. Thousands are crippled for life, or lose their limbs or life from the anti-vital, unscientific treatment of the doctors. Even now the case is easily curable by our simple means. (*See* 146½, *Bath list.*)

"As an old patient, I venture to address you thus. I have a brother suffering from a sore leg. It seems inclined to gather, but does not get on as it should do, it only an ordinary gathering. He has not hurt it. He is just now able to get about a little, and with considerable pain at times. Knowing what your treatment did for myself about twelve years ago, I cannot but think it would do much for him also; and because I think so, I venture to ask your opinion about it. It is very desirable he should have the best aid he can, as he is only of delicate health, and has a large family dependent upon him. By occupation he is a farmer—a person of very temperate habits. I shall esteem it an additional favour if you will kindly give me your opinion about the matter."

Advice in foregoing cases.

I have had many such distressing cases as you describe, and hundreds of similar letters. I am glad you have met with my book, to guard you against medicine or any doctors' remedies, such as using catheter, or causticing the urinal tube, and bringing on stricture, which is so often done. Only patience and the use of means I advise, at page 10 in the tract I now send. It is also on page 107 of my book. I do not think galvanism will help you; it may rather excite. I will gladly give you advice; I do not charge; and I will send you a copy of my fourteenth edition as soon as it is out, in a few weeks.

Case.

"Sir,—For some twelve months I have been severely troubled with stone and gravel. I have never yet succeeded in passing either, although my medical attendant says its presence is clearly shown; and from the manner I am always held I have no reason to doubt his accuracy; the doctor says a stone must be forming in the kidneys. I have suffered a very great deal at short intervals. Medical attendance, Vichy waters, Harrowgate waters, &c., I have drank off freely; and, with one thing and another, were it not for friends, I would be completely prostrate in pecuniary circumstances. Some five or six weeks since, a friend, a believer in hydropathy, recommended me to wear a wet compress over my kidneys, and round my lower portions of my neck. Since then I have had one attack, which laid me low about three days; I still persevered with it, and now all place covered, my back especially, is covered with a pimply rash, called, I suppose, the climax. I wish you to advise me how I must deal with it, whether to keep on wearing the wet cloths or not; also, what would you advise me to do to obtain relief, and, if possible, a total cure. I would have been at Matlock, but cannot afford it at present. Your kind attention and early reply would be considered a great boon, and most thankfully received."

Reply to the above.

Had your case been treated with our 98, bath list, or 64, 141, our 70¾, 48, 50, 141, 137, 220, before and behind in night, 169¼, in day, or 163 in day, you would probably have escaped your present state; such applications are now what you require. As to the crisis you name, it is quite safe, and will probably give you relief from pain, and perhaps may enable you to pass any small stones. I have had such cases come, and get well, from the surgeon being mistaken as to the formation of stone, if stones of any large size are actually formed, nothing but an operation can remove them. Weiss, surgical-instrument maker, Strand, London, has invented an instrument to crush the stone without cutting; we prohibit all medicine, blisters, stimulants, or tobacco, and little animal food.

Testimony.

"I was visiting my brother at Hatfield Heath, Essex, last month, and was gratified

to find my dear niece so well. I am thankful that, by God's blessing on the treatment she received at your establishment, she was quite recovered enough; her case had been pronounced hopeless. Praying that the Divine blessing may descend upon yourself and Mrs. Smedley."

Tumour near rectum cured.

Mr. Stewart, Rochdale, middle age, about twenty stones in weight, came to our Institution, with a hard substance near the seat. Doctors disagreed as to the nature of it, and an incision was proposed, which, if it had been performed, would have certainly destroyed him. Without knowing the precise nature of the case, I was confident as to the mode of treatment, and believed he would be cured, as we have means to comfort and invigorate the frame doctors have not. For some years he had had severe constipation, for which purgatives were given, which brought on piles, with continuance of physic and improper living, which he was not warned against. Doctors give physic, and leave the patient to his own appetite, believing the medicine will conquer anything; but in this case they were fast, and the patient came in despair to me. I kept him in bed, gave a wonderfully effective liver pack, 48 Bath list, which stimulates the liver without poisoning the stomach with calomel. He had stomach pack No. 50, 44, 98, 144, no stimulants or animal food. He had 220 mostly, or 233, 137. He was very impatient and irritable, as his bowels did not act for a week; but we never regard this, as the skin, the lungs, and kidneys take away the impurities of the blood sufficient for a time. He decidedly improved in his general state, slept well under our comforting treatment. The hard substance near the seat soon began to enlarge and look inflamed. I was sure then we were on a right track. A doctor would have been alarmed, and cut it, but we encouraged Nature, and threw out the disease. It grew to a large size, and became so painful he could not sleep, and was desirous of having a surgeon. I replied I had no fear of a good result, and would not consent. In ten days from the first the tumour broke, and a core came out as large as a walnut. I then let our consulting surgeon, Dr. Brown, see it, and he said the patient could not possibly live, as there was a hole near the seat he could put two fingers in, and that the sloughing would go on and reach the bladder and rectum, and destroy him. I said I was equally confident, now Nature had had power to expel the matter, she would keep out further mischief, and that he would get well. In six weeks he left us a sound man, entirely renewed in his whole frame, and taught how to live. This is only one case of thousands we have seen rise to life and health by our simple, comforting, invigorating treatment.

"Dear Sir,—Some years since (1864) it was my privilege to attend your Establishment under the introduction of Mr. Pliny Miles—who accompanied me—and from the great interest you took in my case at that time, I am led again to ask your advice. Shortly after leaving your Establishment I had great trouble, which ended in a severe attack of rheumatic fever, which left me liable to periodical returns of the attack ever afterwards. In the autumn of last year it threatened to return with more than ordinary sharpness, but care and abstinence from all alcoholic beverages, weakened the attack, and finally left me. This summer I caught a severe cold, which settled first in my throat, then on my limbs, producing rheumatic fever, but homœopathic treatment lessened it, only to leave it in a more chronic form, in my ankles and heels, causing my feet to swell with the least exertion; rest only relieving both pain and swelling. I have tried several things, but although partially relieving me, do not do much, and my system is very low."

Advice for the above Case.

You require a course of our treatment for rheumatic fever as stated in this book, our 46, 50, with 141, 148, with 143, 39, 59, 114, 9, 12, 12½, 163 with 169¼ over in night. Sometimes 220 to get up stomach power, 163 in 233 in day to get up and keep up great warmth over the bowels and liver. 48 necessary twice per week; if you cannot manage that, have a strong mustard plaister over liver, that is under right

ribs and pit of stomach, and rubbing those parts with our chillie paste, or mustard and water, and sometimes with cold water, as 73½. Then as to the feet and ankles, immerse them in warm water with oatmeal in, up to calves, for ten or fifteen minutes every night, afterwards rub with dry towel and hands, then put on 214 over feet, ankles and legs until morning. On removing 214 rub the ankles, legs and feet with chillie paste or neat's-foot oil for a few minutes, then put on warm lambs' wool stockings, not socks, 9, 10, 12, 12½, on rising, sometimes 13, 12, 12½, when feet not done up, in 214, use 194. Total abstinence from stimulants, or it will be impossible to get well. No tobacco or pastry; little animal food, no soda-water; purgatives destructive; if bowels do not act, no consequence even for a week, use 152, but bowels will act by persevering in these plans; 73¾ good, warm clothing, now weather is cold and damp, and if you do not act strictly on these plans you will probably be crippled and unable for any duties. Why did you go to the ruinous drug system after being with us? You see the certain consequences.

One is continually told that the barbarous blistering, leeching, and cutting are rarely practised now, but facts prove entirely the contrary. I have to-day received the following letter. The young man is ruined. The thick discharge should have been absorbed by our 92, 99, 144, 115½, 116½, 48, 50, *with* 141 *on* 163, 233, 235. *It is stranye that all the medical science of the day cannot suggest some mode of getting these absorbents to act, instead of boring a hole, which they well know would only be temporary relief, and that the scrotum would soon fill again, and finally destroy him.*

"I take the liberty of addressing you, asking if you will be so good as to give me your opinion respecting my case. I have been suffering, according to medical advice, from strumous disease of the testicles, with sudden pains in legs and thighs, causing great weakness. I received a blow in the testicle about six years since, but felt nothing of it until ten months ago, when I was suffering from a bad cold, and the swelling commenced from that time. Was in Guy's Hospital for three weeks with it, and had it lanced twice, from which issued a thick discharge. Have also been in the Consumption Hospital for slight inflammation of the left lung, am still very weak, and have not been able to follow my occupation, as clerk, since the commencement of the disease. Will you therefore kindly give me your advice, and state whether you think I shall receive benefit at your Establishment. I am seventeen years of age."

(*Paralysis in a child from shock.*)

"Auckland, New Zealand, August 9th, 1872.

"Dear Sir,—I hope you will pardon an anxious mother about an only son. When he was only two years old I left him sleeping, and went to purchase a few things for a friend who had lost a little one by death. As my boy had slept regularly three hours each day for twelve months before that sad day, my husband and I thought there would be no fear of him waking, and I would go so much quicker. It was my first child, and as we are only working people we had no one to leave with him. I was away about one hour; when I came back my dear boy was sitting in his bed looking very sad, but not crying, I think he was past crying. I could see nothing wrong until he began to run, when he complained of being tired; that was on the 20th of April, 1862. The next day, whenever he walked he fell off his feet. We sent at once for Dr. John B——, Glasgow, Scotland, where we then lived. He at once said it was the crying that caused his nervous system to be upset, ordered him elastic stays, gave me a bottle of stuff to strengthen, and ordered a perambulator, and to keep him as much in the fresh air as possible. All this was faithfully attended to; for six months he could not put a foot below him. My husband was always in favour of water treatment, although we unfortunately did not know of you or your books, till now, when we are so far from you, we have your Hand-book of Hydropathy, but there are no directions for such a case. We are still poor or I would be glad to send my dear boy to you, as I would sacrifice anything to try to make him

right. When my husband spoke to the doctor about water applications and rubbings, he said all the water in the world would do no good. My boy is now twelve years old: he can walk, but not far; it is all in the left leg, the right leg is all right, and always has been; he cannot run, and to stand on the left leg he cannot for a moment. His health otherwise is pretty good since we came out here, which is seven years this month since we arrived. I do hope you will excuse me for using this liberty. If you think anything can be done, send me a few directions, I shall be for ever grateful, and my prayer shall be to Him, whom I trust we both love and try to serve in humble faith, that He may reward you openly.

"P.S.—When the boy cries his leg is worse, weaker."

(*Directions for the above case.*)

Keep 214 on leg regularly night and day; sponge the swan's-down over with a little mustard and water if the skin can bear it comfortably. Wear also 195½ over, and keep 153, or 194, or 195 to foot night and day, according to feelings. Put 163 under the present elastic body-bandage; and if it does not keep warm wear 172 over the elastic as well as the 163 under.

On rising, give 123, using 128 before and after, and well rub the leg with chillie paste or neat's-foot or cod-liver oil and hand, whilst sitting, as 123. As you probably cannot get chillie paste, use pounded chillies with unsalted lard. Forenoon and afternoon repeat the leg treatment rubbings as above, but give 17 first. Bedtime 222, or 13¾, if there has been much perspiration over the body, and renew all the bandages, &c.

(From a former patient restored to health at our Institution.)

(*To Mr. and Mrs. Smedley on their retirement, by a grateful lady patient.*)

And is it so, indeed? Then must we lose
From midst us those who, through the vanished years,
Tenderly ministered to human woes,
And from dim eyes still strove to wipe the tears
Of Nature's anguish—plied each healing balm
To cool the throbbing brow, the burning brain;
To pour through vein and tissue blessed calm,
And chase from the worn sufferer strife and pain?

Yes, even so; and we must hush each sigh,
And yield with cheerful smiles the wise, and true,
The self-devoted ones—they who on high
Still gazed, and thence their inspiration drew.
Let it be ours, submissive to resign
The friends so closely wound around each heart,
With patience miss the looks sweet and benign
That erst were wont such comfort to impart.

True, when they've vanished from beyond our sight,
All who have loved them, turning sadly back,
Will still recall of other days the light
Which yet so brightly shines o'er memory's track:
For never let it be forgot that when
Their life was in its flower, to us 'twas given;
Its constant rule—Who aids his fellow men
Pleases his Maker best, is nearest heaven.

And now, farewell! Since Providence commands,
Where'er, dear friends, your steps in future roam,
Whether in search of health, to foreign lands,
Or resting in the sweet repose of home—
Our hearts' best wishes and our prayers we give
To you; and blessings earnestly implore
On those whose life still showed us how to live,
And strove to guide us to a brighter shore.

Hyde Park, June 19, 1872. HELEN HOLLAND.

ADULTERATION OF FOOD.

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THE FOLLOWING EXTRACTS WILL SHOW THE IMPORTANCE OF THE SUBJECT:—

"Potted beef is, in nine cases out of ten, coloured by means of bole Armenian.

"Potted herrings generally contain bole Armenian to a very great extent, and are also very frequently adulterated with flour and starch.

"Anchovy paste appears to be even more adulterated than the potted meats (for an account of which the reader is referred to the article *Anchovies*).

"The active chemical substance in bole Armenian is oxide of iron. It is rarely used in medicine, but when taken, it has a tonic and rather stimulating effect. But we must remember that bole Armenian has, in some instances, been found to be adulterated with red lead; and the presence of this active and fatal poison has been more than once detected in potted meat and fish.

"Bottled Fruits.—The property of copper solutions in imparting a permanent and vivid green colour to the liquid used in preserving vegetable substances, has been largely and poisonously taken advantage of by the manufacturers of bottled fruits. The quantity of copper contained in such articles may not be sufficient to produce fatal effects on all constitutions, but serious symptoms of gastric irritation are sometimes produced on children which may assume an alarming character. Some preserved gooseberries, sent by a friend to Professor Taylor for examination, were found to be largely impregnated with copper; indeed, the poison was present in sufficient doses 'to cause colic and vomiting,' and the other painful symptoms of chronic poisoning in its most aggravated form. In his examination before the Adulteration Committee, Dr. Hassall mentioned another instance of this poisonous adulteration. A gentleman wrote to the *Lancet*, giving his name and address, and stating that he had partaken at dinner of some rhubarb tart, which he had noticed presented a very peculiar appearance, for it was much more green than it should be. He partook of it with suspicion, but still did eat some of it; and on accidentally casting his eyes down and looking at his fork, which was of steel, he found the prongs covered with copper.

"The gratitude of the public towards Dr. Hassall ought to be both great and lasting, for the philanthropic patience with which he has examined into the adulterations of all articles of food. That gentleman, after analysing forty different samples of bottled fruits, came to the terrible conclusion that (with only one single exception) all of them were contaminated with copper.

"Flour is not so much adulterated as might have been expected, from the fearful extent to which adulteration is carried in the manufacture of bread. The falsifications practised by the millers principally consist of mixing bad flour with good. Pereira, however, states (1850) that wheat flour is subject to adulteration with various vegetable and mineral substances. Among vegetable substances, he names the following:—Potato starch, the meal of other cereal grains (viz., of maize, rice, barley, and rye), of buck-wheat, and of certain leguminous seeds (viz., of beans, peas, and vetch).

"The numerous other substances which have been used to adulterate wheat flour are chiefly chalk and sulphate of lime—plaster of Paris. White clay and bone-ashes are also said to have been used. Sulphate of copper and alum are mixtures added to buck-wheat flour to improve its quality, and render it more fitted for making bread.

"There is no doubt that flour, before it is ultimately made into bread, suffers a double adulteration. First of all, the miller adds either a cheaper material, or mixes with it some chemical substance, for the purpose of improving the appearance of his goods. Thus the miller frequently adulterates his flour with alum, and the baker again adulterates it, by putting a little more to it.

"BREAD.—The adulterations consist principally of the introduction of alum; sometimes it is used in large quantities. In bread that has been carelessly mixed, a crystal of alum has been discovered the size of a large pea, and in other cases large crystals of alum have been found. To the poor, whose daily food consists almost entirely of bread, this shameful adulteration is productive of much hardship. The working man, instead of finding in his daily allowance the nourishment which he pays for, gets, on the contrary, an enfeebled power of digestion, and, consequently, an inferior power of performing work. The effect of the alum is to augment the whiteness and firmness of bread made from interior kinds of flour. Home-made bread has a yellowish tinge, which alum would remove. The use of alum is forbidden by law, but it is frequently employed, under the name of '*stuff*.' Whatever doubts may be entertained as to the ill effects of alum on the healthy stomach, none can exist as to its injurious effect in cases of dyspepsia.

"Alum acts chemically on the animal tissues and fluids. If a solution of it in water be added in certain proportions to albumen, it causes a white precipitate. It also forms insoluble combinations with milk and gelatine. These phenomena explain the action of alum on the fibrinous, albuminous, and gelatinous constituents of the living tissues. The immediate topical effect of a solution of alum is that of an astringent; it causes the smaller vessels in the body to contract. By diminishing the diameter of the blood-vessels, it checks the supply of blood, and so produces paleness of the parts. It is by these local effects that 'alum, when taken internally, causes dryness of the mouth and throat, somewhat increases thirst, checks the secretions of the alimentary canal, and thereby diminishes the frequency, and increases the consistency of the stools, as observed by Wibmer in his experiments made on himself with alum, in doses of *three grains*, dissolved in five drachms of water, and taken several times during the day.'

"CAKES, PASTRY, &c.—Cakes, of which the plum-cake may be taken as the type, may be regarded as a rich variety of bread, though, in common parlance, they are considered distinct from this. They are composed of wheaten flour, butter or lard, eggs, sugar, raisins, currants, almonds, &c. They form a most indigestible kind of food, totally unfit for children, invalids, and dyspeptics. Their indigestible quality is principally derived from the butter or lard which they contain. The adulterations in cakes, &c., consist almost entirely of the adulterations in the flour, sugar, butter, or lard with which they are made.

"SUGAR.—The impurities are either organic or inorganic. The organic impurities consist of fragments of the cane, grape-sugar, albumen, an insect peculiar to cane-sugar, fungi, woody fibre, and starch-granules. The inorganic impurities have been found to consist of lime, lead, iron, sand, and grit. All of these impurities arise from the imperfect preparation of the juice before allowing it to crystallize. Grape-sugar is a low sugar, deficient in sweetening powers; therefore it is evident that by admixture with grape-sugar, that of the cane must be greatly depreciated in value.

"Dr. Pereira states that brown sugar is extensively adulterated with sugar prepared from the potato-starch as well as with that made from sago-flour (these substances are analogous with grape-sugar). Potato-sugar is manufactured at Stratford, in Essex. It is clammy, and wants that sparkling crystalline appearance possessed by West India sugar, is much less sweet than the latter, and possesses a bitter, somewhat unpleasant taste.

"We have above stated that one of the impurities of sugar was an insect peculiar to the juice of the cane. The discovery of this animalcule is due to Dr. Hassall, who was the first to employ the microscope in his researches into the adulteration of sugar. We cannot do better than borrow his description of it. This insect is a beetle-like animalcule, of the genus *Acarus*.

"'The sugar acarus approaches somewhat, in organization and habits, to the louse and the itch-insect itself, which are also included in the genus *Acarus*. The sugar mite is in size so considerable that it is plainly visible to the unaided sight. When present in sugar it may be detected by the following proceeding:—Two or three teaspoonfuls of sugar should be dissolved in a large wine-glass of tepid water, and the solution allowed to remain at rest for an hour or so; at the end of that time the animalcules will be found, some on the

surface of the liquid, some adhering to the sides of the glass, and others at the bottom, mixed up with the dark and copious sediment.'

"For the consolation of our readers, we are happy to announce that this insect is never found in purified, *i. e.* lump sugar. It owes its existence and nutriment to the albumen which, as we said before, is always present in inferior sugars."

SWEETMEATS AND LOZENGES, and Cough mixtures, are all adulterated with ingredients dangerous to life. The raspberry and strawberry flavoured lozenges have not a particle of the juice of the fruit in the flavour—being given by chemical compounds entirely; and as to the flavoured syrups, they are vile mixtures simply made for sale. (See book.)

"MILK.—The Honourable F. Byng, in a pamphlet on the Sanitary Condition of the Parish of St. James, Westminster, gives the following description of the state in which he found the cow-sheds of the district. 'Two of these sheds (of which there are fourteen in the parish) are situate at the angle of Hopkins and New-street, Golden-square, and range one above the other, within a yard of the back of the houses in New-street. Forty cows are kept in them, two in each seven feet of space. There is no ventilation save by the unceiled tile roof, through which the ammoniacal vapours escape into the houses, to the destruction of the health of the inmates. Besides the animals, there is at one end of the sheds a large tank for grains, a store place for turnips and hay, and between them a receptacle into which the liquid manure drains, and the solid is heaped. At the other end is a capacious vault with a brick partition, one division of which contains mangel-wurzel, potatoes, and turnips, and the other a dirty, yellow, sour-smelling liquid called brewers' wash, a portion of which is pumped up and mixed with the food of the cows. The neighbours are subject also to the annoyance of manure carts, which frequently stand some time in front of their houses; and when the mouth of the vault is opened to admit the ingress of the brewers' wash, a burning sour smell is described by them as pervading the dwellings. After the buildings have remained closed for the night, the atmosphere within becomes heated, foul, and unwholesome. In summer-time, the smell is most offensive. Decomposition of the vegetable matters in the vault is also stated to be frequent, and the stench thence arising insufferable. At the opposite side of the houses, in the same street, is another shed, with even less possibility of ventilation than in those just described. Thirty-two cows stand side by side, two in each space of seven feet, as above. In Marshall-street there is a third establishment, containing twenty-eight cows. An a wall on one side, overlooking a yard in which is a slaughter-house, are several grated openings, but they are carefully covered with pieces of sacking, as if to prevent all possible admission of air. In the shed are receptacles for vegetables and grains as before. The manure tank holds twelve tons, and that for brewers' wash 600 gallons. It is to be remarked, that even the manure, from the nature of the food supplied to the cows, acquires a peculiarly unhealthy and offensive odour, altogether dissimilar to that from farm-fed animals. In this atmosphere, reeking with all these pestiferous effluvia, the poor creatures are kept close shut up night and day, till, their milk failing, they are consigned to the butcher. The effects of this system of feeding, impure air, and deprivation of all exercise, are thus described from actual inspection of four cows, which the keeper said were suffering from the old disease.

"'There was inflammation of the mucous membrane of the mouth, fauces, and gullet, a catarrhal discharge from the nostrils, and such prostration of the muscular system, as to render the animals unable to remain in a standing position for any length of time. The mucous membrane of the mouth is sometimes so blistered as to prevent the animals from taking food. Swellings of the udder appeared, attended by a change in the quality and deficiency in the secretion of milk. The feet also became much diseased and swollen; general emaciation followed, in which the animals continued for an indefinite period, or till death. Four months prior to this visit, the owner of one of these sheds lost thirteen cows by disease.

"'A Dutch cow was pointed out, which was evidently in a state of marasmus, her head hanging nearly to the ground; the horns cold; the ribs staring through the hide on each side of her emaciated body, on which the hair bristled and stood erect. Notwithstanding this prostration of the vital powers, the cow was regularly milked with the others, furnishing a daily supply of ten quarts.' Dr. Normandy, in his evidence before the Parliamentary Committee, tells us that he witnessed, in Clerkenwell, a spectacle which prevented him from tasting milk for six months. He saw about thirty or forty cows in the most disgusting condition one can possibly imagine,

full of ulcers; their teats in a most horribly diseased ulcerated state, and their legs full of tumours and abscesses; in fact, it was terrible to look at. A fellow was milking these poor cows in the middle of all this purulent abomination. The litter on which the beasts stood was a mass of fuming and fermenting matter, resembling a dung-heap.

"The animals kept by a great many London cow-keepers are in the same condition as that described by Dr. Normandy. There can be no doubt that diseased matter is thus introduced into the milk.

"WATER in its natural state is never perfectly pure, rain-water being contaminated by the impurities which it takes up in falling through the air, spring-water by those with which it meets in rising from the earth. The natural colour of water in large masses is blue, but it is only in certain parts of the Pacific and Mediterranean that the colour is observable. In our muddy English rivers we find it grey or brown; sometimes, when the amount of vegetable matter which it contains is very great, it appears almost black; and off the British coast, the yellow matter which it holds in solution combines with the native blue, and gives it a green tint. The very clearest spring-waters, even after being filtered, are never pure. Water is the only substance which, to be fit for consumption, must not be pure; that is to say, it must contain some atmospheric air. Pure water is, of course, a chemical compound, and contains no air whatever. But such water is unfit for consumption, because it contains no air; it is indigestible, heavy, and in fact it would appear that distilled water, which is pure water, and which is supplied to the navy occasionally, from stills erected for the purpose on board, is actually so vapid, that after a few days' use the sailors will hardly drink it. Neither is it prudent that such distilled water should be used, for, by reason of its containing no air, it has a great tendency to take air from the medium where it is kept; so that if distilled or boiled water, which contains no air, is kept in a ship's hold, or in an impure dwelling, it will absorb precisely the quantity of air which it can absorb, namely, five cubic inches per gallon, and become perfectly putrid and fœtid, or contaminated by organic matter. Water should always be kept, when it has been distilled or boiled, in perfectly ventilated rooms or pure receptacles, or else it will become as foul as or more foul than before. Dr. Stenhouse, three or four years ago, found that charcoal had the power of purifying air. Acting upon his data, Dr. Normandy has since found that charcoal has the same power of purifying *aërated* water which contains foul organic matter, provided only the water is aërated; that is to say, contains air.

"COCOA AND CHOCOLATE.—It is computed that cocoa is used as an article of diet by at least fifty millions of the human race. Its chief consumption takes place in Spain, Italy, France, Central America and Mexico. It is an extremely nutritious substance, closely resembling milk in its composition. Thus milk when dried by evaporation, and the cocoa-bean when dried, consist respectively of—

	Milk.	Cocoa-bean.
Casein or gluten	35	21
Fat	22	51
Starch or sugar, &c.....	37	22
Ash or mineral matter....	4	4
Theobromine.....	2	2
	100	100

"Mr. Mitchell, writing of the adulterations of cocoa, says, 'Chocolate is adulterated with flour, potato-starch, and sugar, together with cocoa-nut oil, lard, or even tallow.' The mineral substances employed in the making up of chocolate are, according to Mr. Mitchell, some of the ochres, both red and yellow. These earths are used for the purpose of giving weight, and also to give the colour of cocoa to the vast quantities of starch with which the chocolate and cocoa is adulterated. Dr. Normandy, who has devoted much time and patient research to the adulterations of chocolate, expresses himself very strongly on the subject. Many of the preparations of the cocoa-bean, sold under the names of chocolate, of cocoa-flake, and of chocolate powder, consist of a most disgusting mixture of bad or musty beans, with their shells, coarse sugar of the very lowest quality, ground with potato-starch, old sea biscuits, coarse branny flour, animal fat (generally tallow, or even greaves). Cocoa powder is sometimes made of potato-starch, moistened with a decoction of husks, and sweetened with treacle; chocolate is also made of the same materials, with the addition of tallow and ochre. Chocolate, in which either brick-dust or red ochre had been introduced, to the extent of twelve per cent., is commonly sold as a pure and genuine article. An instance is given of chocolate having been purchased which contained twenty-two per cent. of oxide of iron, the rest being starch, cocoa-beans with their shells, and tallow. It is a common practice to extract from the cocoa-bean

the rich fat or butter which it contains, for the purpose of selling it to druggists, to be used as a medical preparation, and then, in order to replace it in the chocolate, animal grease and tallow is employed. Genuine chocolate is of a dark *brown* colour; that which is adulterated is of a red hue. The only way to insure purity is to buy cocoa-beans; crush and stew them, and skim off the oil.

"TEAS are very much adulterated, not only in England, but also in China. From Mr. Fortune, who himself witnessed the process employed by the Chinese for giving an artificial colouring to green tea, we gather the following particulars of the process:—'The superintendent takes a portion of Prussian blue, throws it into a porcelain bowl, not unlike a mortar, and crushes it into a very fine powder; at the same time a quantity of gypsum is burned in the charcoal fire over which the tea is roasting. This gypsum having been taken out of the fire after a short time, readily crumbles down, and is reduced to powder in the mortar. The two substances thus prepared are then mixed together, in the proportion of four of gypsum to three of Prussian blue, and form a light blue powder, which is then ready for use. This colouring matter is applied to the tea during the last process of roasting. About five minutes before the tea is removed from the pans, the superintendent takes a small porcelain spoon, and with it he scatters a portion of the colouring matter over the leaves in each pan. The workmen then turn the leaves rapidly round with both hands, in order that the colour may be equally diffused. To fourteen pounds of tea about one ounce of colouring matter is applied. During this part of the operation the hands of the workmen are quite blue. The Chinese acknowledge that tea is much better without such ingredients, and that they never drink dyed tea themselves; but remark that foreigners seem to prefer having a mixture of Prussian blue and gypsum with their tea, to make it look uniform and pretty; and as these ingredients are cheap enough, they have no objection to supply them, especially as such teas always fetch a higher price. The adulterated tea manufactured in China under the appropriate name of lie tea, and of which half a million pounds weight is imported annually into this country, consists of the sweepings of the tea warehouses, mixed with rice-water, and rolled into grains. It is made either black or green, and with the acknowledged purpose of adulterating other teas. Genuine teas yield only from five to six per cent. of ash, while lie tea yields from thirty-seven to forty-five *per cent.*, thus indicating the large amount of dust and other impurities with which it is mixed."

MUSTARD is so notoriously adulterated that it is said a pure sample is not to be bought; the best way to have it genuine is to purchase mustard seed, and have a small coffee-mill to grind it; and although it will not have such a bright appearance, it will be pure. For mustard plaisters, or mustard foot-baths, mustard husks can be bought of mustard-makers at 10s. per cwt. (See book.)

"GROUND PEPPER is so much adulterated, that the only method of obtaining it in a pure state is, like coffee, to buy the article in the grain, and reduce it to powder by a hand mill.

"The principal substances used by the dealers to defraud the purchaser are linseed, wheat flour, mustard seed, pea flour, and ground rice.

"Some years since it was not uncommon to meet with artificial peppercorns. Accum, in his celebrated 'Death in the Pot,' says, that he has examined large packages of both black and white pepper, and has found them to contain about sixteen per cent. of this artificial compound. This spurious pepper is made of oil cake, common clay, and a portion of Cayenne pepper, formed into a mass, and granulated by being first pressed through a sieve, and then rolled in a cask. The reader will perhaps remember that a somewhat similar fraud was practised with chicory, by compressing in a machine until it resembled the coffee berry.

"PICKLES.—On turning to Accum's invaluable work on the adulterations of food, we read—'Vegetable substances preserved in the state called pickles, by means of the antiseptic power of vinegar, whose sale frequently depends upon a fine lively green colour, and the consumption of which, by seafaring people in particular, is prodigious, are sometimes intentionally coloured by means of copper. Gherkins, French beans, samphires, the green pods of capsicum, and many other pickled vegetable substances, oftener than is perhaps expected, are met with impregnated with this metal. Numerous fatal consequences are known to have ensued from the use of these stimulants to the palate, to which the fresh and pleasing hue has been imparted, according to the deadly *formulæ* laid down in some modern cookery books, such as boiling the pickles with half-pence, or suffering them to stand for a considerable period in brazen vessels.'

"VINEGAR.—The most common adultera-

tion of vinegar is to mix the inferior malt vinegars with pyroligneous acid. This imitation has not so fragrant an odour as the genuine article.

"The dark colour of the vinegar sold in England is owing to the presence of burnt sugar, which is added solely for colouring purposes. Why this absurdity should be persisted in it is impossible to say, since the most valuable wine vinegars are principally distinguished for their light, bright, and transparent clearness.

"The permission which has been accorded by the law to manufacturers to add a small quantity of sulphuric acid to their vinegar, has, unfortunately, been largely taken advantage of for the purpose of giving a false strength to otherwise worthless produce. The weak vinegars, which they sell at a low price, are, without greatly increasing their cost, made to equal in acidity the better class of manufactures, by employing sulphuric acid.

'Tobacco.—The French tobacco contains from four to seven per cent. of nicotine. It is not many years since an immense sensation was created in Europe by a murder committed by means of nicotine. The Count Bocarme, a Belgian nobleman, to possess himself of certain estates, poisoned his brother-in-law with an infusion of tobacco. Whenever the use or application of this plant has proved fatal, it is always owing to the action of this poison. When applied as a poultice to wounded or diseased surfaces it may occasion the most alarming symptoms. A youth afflicted with ringworm was killed by having tobacco leaves applied to the sore.

"As a poison, nicotine is almost as powerful as prussic acid. A single drop given to a dog was sufficient to destroy life; and Orfila, on examining the stomach of the animal on which the experiment had been made, found that the mucous membrane of the stomach was greatly inflamed, and of a vivid red throughout. Dr. Pereira considers that it is not safe to administer medicinally more than twenty grains of tobacco; and as the strongest leaves do not contain more than eight per cent. of nicotine, the amount of poison present is very small. Dr. Copeland lost his life from employing a dose of thirty grains of tobacco. Nicotianin is the concrete volatile oil of tobacco, obtained by distilling the leaves. It is also very poisonous. Hermbstädt swallowed a *grain* of it, which produced nausea, giddiness, and inclination to vomit. The smoke drawn into the mouth during the act of consuming tobacco, either in a pipe or as a cigar, has been analysed by Melsens. In one hundred grains of Virginian tobacco he detected the alarming quantity of three-quarters of a grain of nicotine.

"Drugs.—In health we have to contend against the adulterations in our daily food; and when, at last, they have rendered us ill, then we have to fight against the adulterations of the medicines that are given for our recovery. The adulterations of drugs may be divided into three classes: the adulterations which are practised upon the drugs before they reach this country; the adulterations practised by the drug-grinder, or person whose business it is to prepare them for the market, by reducing them to a powder; and the adulterations committed in the shop of the retailing chemist. All the gentlemen examined by the Select Committee on Adulterations of Food, &c., agreed in saying that by far the greater proportion of that adulteration was due to the drug-grinder."

Fallacies of the Drug Medication practice, according to the showing of its own professors, (*see page* 234):—

"To the aid of allopathy the untiring energy and talent of ages have been brought, and great are the advancements in Chemistry, Anatomy, Physiology, and Pathology, in inventions for investigation of disease, in the history of disease itself, in social science; and incalculable the philanthropy and benevolence displayed by the members of its ranks in this and other times. Yet, says Dr. Williams, the author of the able work on 'The Principles of Medicine,' in his introductory chapter—'Compare the state of the practice of medicine with that of anatomy, physiology, chemistry, the great fundamental or preparatory studies. How minute, how precise, how connected and definite are these! Yet how loose, indefinite, uncertain, unconnected is the practice of our art! To the public it appears altogether vague—without any acknowledged principles. Is there any wonder then that quackery should triumph? that the public show their want of faith in legitimate medicine by their ready belief in any novelty that is not legitimate? The public may show their ignorance by such credulity, but they show also the want of something plain and trustworthy in regular medicine.'

CLIMATE.—A few lines on this subject may be of service to the few who can change their residence from the cold northern counties for the more genial south. Numbers of delicate persons die simply because their constitutions cannot stand the change from a temperature, in September, of 80 or sometimes 100 degrees in the sun, in the day, to 40 in the night; and in winter, from 50 degrees in the day, to freezing point, 32, in the night, and sometimes down to 15 or 20. Much may be done to preserve health and save life, by strict abstinence from stimulants, attending to clothing, as laid down in this work, and to simple diet. Stimulants, instead of enabling persons better to endure cold and damp, have directly the contrary effect; they lower the power of the body to resist cold, by causing internal congestion, and withdrawing the blood from the surface of the body, where it is necessary to cause a feeling of warmth, and concentrating it where it causes obstruction to the circulation. I have said so much in other places in this work on the necessity of guarding the trunk from the cold and damp of our English climate in winter, that it is unnecessary to repeat it, although I see persons continually bringing upon themselves the most serious diseases simply from this cause. Delicate persons, or any at all liable to bronchial affections, if they cannot go to a warmer climate in winter and spring, may avoid the hazard of going out of warm rooms into the cold, by the use of Maw's respirator, and avoiding going out in stormy weather. Houses built on the plan of our establishment, with outer glazed saloon, gives the inmates space for exercise and good air in any weather, without the hot and close temperature of sitting-rooms generally little ventilated.

The difference of the height of the thermometer betwixt one place and another is not always a correct criterion of the climate: the shelter from the north and east winds is of more consequence to the invalid. The thermometer in the midland counties, in February, 1855, descended 15 to 20 degrees lower than at Torquay and Hastings; and at Penzance the difference was a few degrees more in favour of the invalid. When the weather in Lancashire or Yorkshire, and in the eastern counties, and the more northerly, has been too inclement for delicate persons to go out of doors, invalids could go out daily in these southern localities, and even dispense with fire in the middle of the day. Several friends of ours, who have just now (10th October) removed from Yorkshire to Torquay, inform us it is like returning to summer; the thermometer at the same time varying from 35 degrees in the night, to 45 or 50 in the day, in Yorkshire: and at Hastings the weather quite too mild for the clothing they went in. Whatever may be said by interested doctors as to the beneficial effects of cold, bracing air for invalids, experience will always convince such invalids of the truth of the contrary doctrine. Why are the registrar's reports of deaths so soon and heavily increased when cold weather sets in? And it is notorious the doctors have a very slack time in the summer months: but as soon as October comes in, in the northerly or eastern counties, acute diseases soon find them plenty of employment. By Christmas, they often find it difficult to get through their work.

Some parts in the west of Scotland and Ireland, although so far north, have very mild climates, owing to the influence of the Western Ocean, and their being protected from the north and east winds by ranges of mountains. The Gulf Stream, from the West Indies, flows towards the south-west of England; and the effects of the warm temperature of the water is felt on all the west coast. Many a life would be saved, if persons could, for a winter or two, emigrate to these genial southern climates, to have their constitutions strengthened to stand colder climates of the north.

The climate of Egypt is highly spoken of for the mildness of the winter season, and is now within about fourteen days by steamer. One of my patients, who resides mostly at Cairo, informs us that the temperature and climate of November are equal to our July, and very dry. The discomforts of foreign parts are, however, to be taken into account; and from all the information we have been able to gather on this subject, I believe a sufficiently mild climate is to be found in England, and with English comforts. Hastings, and all the coast in that locality, afford good winter shelter for the invalid; and surely where it is a question of life or death, all other considerations should give way, if the means

are not wanting; but this is often the difficulty. I have corresponded with an invalid, at Hastings, from November to July. The great advantage of Hastings is not so much in a high degree of temperature during winter and spring as the absence of severe weather; the thermometer never descends to within 10 to 20 degrees so low as in the midland and northern parts of England; and even at the Chiswick observatory, the thermometer, in cold weather, goes 10 to 15 degrees lower than at Hastings. My correspondent frequently breakfasted with the window open, or sat on the sea-beach for hours; when, in these more northern parts, we were glad of a good fire. The climate of Hastings and other warm parts of England will bear favourable comparison with any abroad; and as to comforts for an invalid, those to be had in this country are greatly superior, and besides, being within range of friends. Many an invalid is ordered abroad to find discomfort and an early grave; the changes of temperature are greater in Italy and other parts than in England. Invalids should avoid the eastern coast; and as to the north-eastern, few comparatively escape chest complaints entirely. I repeat that whatever may be as to cold, bracing air being good for consumptive or delicate patients, experience will prove that a mild climate, where the patient can breathe with so much more ease, and the advantage of being able to take exercise in the open air, is very much more in favour of health than a cold atmosphere or close rooms with fires. Our large glazed saloons, heated by steam, give us great advantages for winter treatment; we recommend patients to have a course, and learn how to manage their health; but for an entire winter residence in chest diseases, no artificial protection can equal the warm southern localities of England.

CLIMATES. — THE FOLLOWING SKETCH OF CLIMATES, AND THEIR RESPECTIVE ADAPTATION TO THE PRESERVATION OR RESTORATION OF HEALTH, IS TAKEN FROM THE EXCELLENT WORK OF SIR JAMES CLARKE; TO WHICH WE REFER THE READER FOR FURTHER INFORMATION:—

"ENGLISH CLIMATES.—The great desideratum in this country is to find a mild climate and sheltered residence for our pulmonary and other delicate invalids during the winter and spring. Our warmest winter residences in England are mostly found on the southern and south-western shores; indeed, it is their vicinity to the sea which in a great degree renders them warmer than the inland parts in their respective vicinities. The mild region of England admits of a natural division into four districts or groups, each having some peculiar features in its climate which characterise it and distinguish it from the others, both as regards its physical and medical qualities. These are—

"1. The south coast, comprehending the tract of coast between Hastings and Portland Island, including the Isle of Wight.

"The superiority of the climate of this district exists chiefly during the months of December, January, and February. In March, the temperature of this coast, and that of the interior, is nearly the same. In April and May, the temperature of the interior rises above that of the coast, and continues higher, though in a less ratio, through the summer months. In October, the mean temperatures are again equal; and in November, that of the coast begins to exceed the interior. The only places on the south coast which we consider deserving of particular notice are Undercliff, in the Isle of Wight, and Hastings and Brighton, on the coast of Sussex.

"*Undercliff* is decidedly the most sheltered and warmest of these places, and it has, moreover, this convenience of most of our other winter residences, that it also affords a good summer climate.

"*Hastings* follows Undercliff in point of shelter and warmth during the winter and spring months. Its situation at the base of a range of steep hills, which protect it in a considerable degree from the north and north-east winds, renders it a milder and more sheltered residence during this season than the other parts of the coast of Sussex.

"*Brighton* differs materially in the character of its climate from both these places. It is more exposed to northerly winds, but the atmosphere is drier and more bracing. While inferior to Undercliff and Hastings as a residence in diseases of the respiratory organs, accompanied with much irritation, it offers advantages over both to invalids of a relaxed and nervous habit, who are not very excitable. Autumn is the season during which the climate of this place possesses the greatest advantages; and even to the end of December, it is one of the mildest climates in our island, and most favourable for a large class of invalids; more especially for cases in which a relaxed state of the system is a leading feature.

"Invalids who select the coast of Sussex as their winter residence might find it an-

vantageous to pass the autumn at Brighton, and the winter at Hastings.

"2. South-west Coast.—The winter climate of the south coast of Devon has long been noted for its mildness. The temperature of its more sheltered spots during the months of November, December, and January (when the difference is greatest), is, in the average, about five degrees higher than that of London during the same period; whereas, on the south coast, the difference scarcely exceeds two degrees. This superiority of temperature over London at both places occurs chiefly during the night; though the days are proportionally warmer, and the temperature more steady on the south-west than on the south coast.

"Various places on the coast of Devonshire are held in repute on account of the beneficial effects of their climate, more especially in pulmonary diseases. The principal of these are *Torquay*, *Dawlish*, *Sidmouth*, and *Exmouth*. Salcombe, the Montpelier of Huxham, is unquestionably one of the warmest spots in our island during the winter. At Torquay, the invalid has the advantage of a considerable tract of sheltered country, some part or other of which will afford a protracted ride or walk, in whatever direction the wind blows. Torquay is superior in this respect to every place in our island. Its position also on the southern declivity of a range of pretty steep hills, composed chiefly of calcareous rocks, renders it comparatively dry. Hence, while Torquay possesses all the advantages of the climate of this coast, its chief disadvantage (humidity) is felt in a less degree than elsewhere.

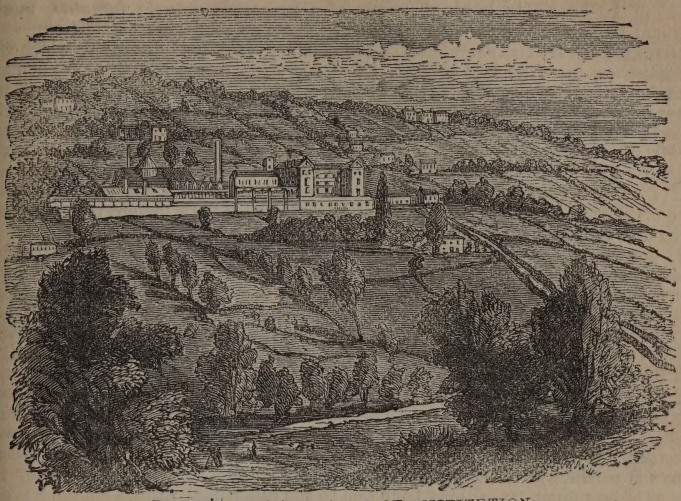
"3. Land's End.—The only place in this district deserving particular notice is *Penzance*, which has long been frequented by invalids on account of the mildness of its winters. Penzance has a very peculiar climate, which depends on its almost peninsular situation at the south-western extremity of the island. A remarkable equality in the distribution of the temperature throughout the year, and throughout the day and night, is a striking character of this place. In this respect, indeed, the climate of Penzance is superior to that of the south of Europe; and the only climate which we have examined that excels it is that of Madeira. This peculiarity of the climate of Penzance will be shown at once by comparing it with that of London, where the difference between the warmest and coldest months is twenty-six degrees, while at Penzance it is only eighteen degrees.

"In other respects the climate of the Land's End does not stand so high in a medical point of view. It is very humid; the quantity of rain which falls annually at Penzance being nearly double that which falls in London, and the number of rainy days much greater. This district is also proverbial for the frequency and violence of its gales; and Penzance, owing to its total want of shelter from the northerly and easterly winds, is colder during the spring than either Torquay or Undercliff. Hence it is, that, although Penzance possesses a decided superiority over all the other situations in our island, in the mildness and equability of its winter climate, its humidity, exposed situation, and liability to winds, render it inferior to several other places as a residence for invalids.

"*Flushing*, a small village in the vicinity of Falmouth, is the only other place in this district deserving notice. The position of Flushing differs from that of Penzance only in being somewhat protected from the north and east winds by a low range of hills which rises immediately behind it.

"Before quitting the south-west coast and Land's End, it is proper to remark, that, though varying somewhat in degree at different places, the predominant character of the climate is that of softness and humidity; on the system generally, it has a soothing but relaxing influence.

"From this character of the climate of the whole south-western coast of our island, it will be at once understood that it is most suitable for the irritable and inflammatory habit, and least so for the relaxed nervous constitution; that in the dry, irritated conditions of the mucous membranes, with a parched state of the skin, it will prove beneficial; while in the morbid states of the same membranes, accompanied with copious secretion, or when there exists a disposition to profuse discharges of any kind, it will prove injurious. Even many of those cases which are benefited by a temporary sojourn would be injured by a permanent residence in this district. The climate, indeed, possesses qualities of so marked a kind, that when it ceases to do good, it generally begins to do harm: hence it will seldom be prudent, much less advantageous, for the invalid who has passed the winter and spring on this coast, to prolong his residence through the summer: he will in general do well to betake himself to a drier and more bracing air, especially if he intends to return the succeeding winter.



FOURTH ENLARGEMENT OF INSTITUTION.

DIVISION VI.

EXTRACTS AND CUTS FROM THE BEST AND MOST MODERN WORKS ON PHYSIOLOGY.

DISEASE. *Morbus.* Any deviation from the natural and healthy actions of the whole system or any particular organ. Diseases may be:—*Local.* Affecting some particular part.—*Constitutional.* Affecting the whole system.—*Specific.* Marked by some disordered vital action, not common to diseases in general, but peculiar to the individual disease.—*Idiopathic.* Primary, and not dependent on any other disease.—*Symptomatic,* or *Sympathetic.* Dependent on and accompanying some other disease.—*Periodical.* Recurring at fixed periods.—*Acute.* Severe and of short continuance.—*Chronic.* Of long continuance. *Sporadic.* Arising from adventitious causes affecting the individual. *Epidemic.* Generally diffused among a population, and arising either from contagion, or some atmospheric or other cause, the influence of which is extensively felt.—*Endemic.* Peculiar to, or especially prevalent in, a certain region.—*Intercurrent.* Sporadic, but occurring during the prevalence of epidemic or endemic diseases.—*Contagious,* or *Infectious.* Communicable from one individual to another by personal contact, or by effluvia diffused through the air.—*Congenital.* Born with the individual.—*Hereditary.* Descending from the parents to their offspring.—*Acquired.* Neither hereditary nor congenital, but dependent on some cause operating after birth.—*Sthenic.* Attended with strong activity of the vital powers.—*Asthenic.* Attended with sinking of the vital powers.

There are many other distinctions of diseases, of more limited application: thus, diseases are *febrile,* attended with fever; *exanthematous,* consisting in an eruptive fever; *intermittent,* marked by a regular cessation and recurrence of the symptoms; *remittent,* marked by a regular diminution and exacerbation of the symptoms; *mild,* unaccompanied with any formidable symptoms; *malignant,* severely depressing the vital powers, dangerous and intractable; the term malignant

has no very definite signification, but is applied chiefly to febrile diseases of the asthenic kind, and to local affections of a cancerous nature; *infantile*, most frequent in childhood; *puerperal*, incident to women soon after parturition.

DISEASES OF ARTISANS.—Besides the common causes of disease to which all mankind are more or less subject, there are some connected with particular occupations and modes of life, the investigation of which is alike important in a practical and philosophical point of view. These causes of disease may, in a general way, be referred—1. To confinement and bad ventilation. 2. To the effects of temperature and moisture. 3. To sedentary habits. 4. To over-fatigue. 5. To excessive exertion of some parts of the body, and inactivity of others. 6. To constrained and unnatural postures. 7. To the noxious influence of animal, vegetable, or mineral particles inhaled with the air, or otherwise applied to the body.

1. *Confinement and bad ventilation*.—The effects of these evils are most conspicuous in children, who suffer more severely from them than adults. In our manufacturing towns, where crowds of children are confined together in a close and impure atmosphere, it is found that the growth of the frame and the expansion of the mind are alike impeded, and the scrofulous diathesis induced; hence ensue deformity, defective development of the sexual system at puberty, and the various modifications of tubercular disease.

2. *Temperature and moisture*.—Constant exposure to either too high or too low a temperature is well known to debilitate the frame and impair the general health; and this effect is much increased, in either instance, by excessive moisture. It does not appear, however, that any ordinary exposure to these causes is productive of any particular diseases; and it is only when the body is subjected to sudden transitions from one to the other, that serious consequences ensue. These arise, chiefly, from the sudden obstruction of cutaneous perspiration, and rapid changes in the relative state of the circulation on the surface and in deep-seated organs. Brass and iron founders, glass-blowers, bakers, brewers, and various other artizans, are continually subjected to an injuriously warm atmosphere; and an imprudent transition to the open air, and still more an exposure to cold draughts, frequently gives rise to catarrhal and rheumatic affections, asthma, and visceral inflammation.

3. *Sedentary habits*.—The general effect of want of exercise is to diminish the tone of the muscles, to render the functions of the abdominal viscera torpid, and to induce langour and debility of the whole system, with a predominance of the lymphatic temperament: hence, dyspepsia, constipation, hæmorrhoids, obesity, and, in females, leucorrhœa, and derangements of the menstrual function. The sitting posture, also, when too long continued, is evidently inimical to the free performance of various important functions. Literary persons, clerks, weavers, sempstresses, and many others, are liable to suffer in their health from deficient exercise and the sitting posture. There are some occupations which combine an unnatural and constrained position of the body with sedentary habits: these cases will be presently noticed.

4. *Over-fatigue*.—An undue expenditure of muscular power doubtless tends to shorten the term of life, by gradually exhausting the vital energy; its effects, however, are seldom very appreciable, unless over-exertion be combined with intemperance, or habits otherwise unhealthy. Coalheavers, porters, and various others, are liable to suffer from over-exertion of the muscles.

5. *Excessive exertion of some parts of the body, and inactivity of others*.—The bad consequences of excessive exertion of particular organs is exemplified in diseases of the heart, lungs, and their great vessels, which are produced by over exertion of the respiratory apparatus, in those who play on wind instruments and in singers. Amaurosis, cataract, and other diseases of the eyes, are common among those whose occupation obliges them to exercise their vision for a length of time on very minute objects, or to expose their eyes to a glare of light; as watchmakers, engravers, those engaged about large furnaces, &c.

To the combined influence of posture and local exertion, may be attributed the frequency of hernia at the groin in cavalry soldiers who ride with very long stirrups. The effect of inactivity on particular parts of the body seldom amounts to absolute disease; but muscular debility is the general result of insufficient exercise of any of the limbs: we have a familiar example in postilions, and others who are constantly riding, and who are frequently so weak in the legs, that, even when otherwise robust, they are unable to walk any distance without great fatigue.

6. *Constrained and unnatural postures.*—The evils arising from this cause are experienced by many classes of artizans. In tailors, shoemakers, button burnishers, and others, the bent position of the body weakens the spine, and interferes with the functions of the thoracic and abdominal viscera, while the strong pressure which is frequently made on the epigastrium is particularly injurious to the stomach: hence curvature of the spine, dyspepsia, gastrodynia, constipation, hæmorrhoids, asthma, and pulmonary diseases. Clerks in offices, who acquire the habit of leaning too much over the desk, and pressing the epigastrium against its edge, are subject to the same evils in a minor degree.

7. *The action of animal, vegetable, or mineral particles, inhaled with the air, or otherwise applied to the body.*—The principal morbific agents of this kind are mercury, lead, copper, arsenic, antimony, zinc, tin, the mineral acids, animal putrefaction, vegetable putrefaction, soot, and fine powders of various kinds, which produce mechanical irritation.—*Hooper's Medical Dictionary.*

FAINTING OR SYNCOPE. (From the Greek, I strike, or cut down.) Fainting or swooning. A disease in which the respiration and action of the heart either cease, or become much weaker than usual, with paleness and coldness, arising from diminished energy of the brain, or from organic affections of the heart. Cullen's species are:—

1. *Syncope cardiaca*, the cardiac syncope, arising without a visible cause, and with violent palpitation of the heart during the intervals, and depending generally on some organic affection of the heart or neighbouring vessels.

2. *Syncope occasionalis*, the exciting cause being manifest. The disease is sometimes preceded by anxiety about the præcordia, a sense of fulness ascending from the stomach towards the head, vertigo, or confusion of ideas, dimness of sight, and coldness of the extremities. The attacks are frequently attended with or end in vomiting, and sometimes in epileptic or other convulsions. The causes are sudden and violent emotions of the mind, pungent or disagreeable odours, derangement of the primæ viæ, debility from preceding disorders, loss of blood, spontaneous or artificial, the operation of paracentesis, the kneeling position, &c. An ordinary fainting fit is a matter of little importance, and occurs frequently in persons who are in general perfectly healthy. The actions of the system will generally be spontaneously restored in a short time. This is accelerated by the horizontal position, which throws the blood on the brain, and thereby stimulates it to resume its wonted functions. Pungent volatile substances applied to the nostrils, cold water sprinkled on the face or chest, and the internal administration of gentle stimulants as soon as the patient can swallow, may also be resorted to. The more formidable kinds of syncope, which arise from diseases of the heart or great vessels, or from profuse hæmorrhage, need not be noticed here, as their consideration belongs to the particular case in connexion with which they occur. (See page 220.)

BALDNESS. *Calvities.* The falling off of the hair, which is natural in old age, may be prematurely induced by a variety of causes. It is common after severe fevers; and consumptive patients, and those labouring under cachectic diseases, frequently lose their hair. In these cases it probably arises from debility of the cutaneous vessels, and insufficient nutrition of the bulbs of the hair. Some persons, who are in all respects healthy, lose their hair very early in life, without any obvious cause. Where the disposition to baldness is only slight, the use of animal fat, as bears' grease, &c., will often suffice to obviate

it; but when the hair falls off in any quantity, the only effectual remedy is t
s have the head.

DIGESTION. (*Digestio;* from *digero*, I dissolve.)

1. An operation in *Chemistry* and *Pharmacy*, in which such matters as ar
intended to act slowly on each other are exposed to a heat, continued for som
time.

2. In *Physiology*, the change that the food undergoes in the stomach, b
which it is converted into chyme.

The immediate object of digestion is formation of chyle, a matter destine
for the reparation of the continual waste of the animal economy. The digestiv
organs contribute also in many other ways to nutrition. If we judge of the im
portance of a function by the number and variety of its organs, digestion ough
to be placed in the first rank; no other function of the animal economy present
such a complicated apparatus. There always exists an evident relation betwee
the sort of aliment proper for an animal, and the disposition of its digestiv
organs. If, by their nature, the aliments are very different from the element
which compose the animal, if, for example, it is graminivorous, the dimension
of the apparatus will be more complicated and more considerable; if, on the
contrary, the animal feeds on flesh, the digestive organs will be fewer and more
simple, as is seen in the carnivorous animals. Man, called to use equally animal
and vegetable aliments, keeps a mean between the graminivorous and carni
vorous animals, as to the disposition and complication of his digestive apparatus,
without deserving, on that account, to be called omnivorous.

We may represent the digestive apparatus as a long canal, variously twisted
upon itself, wide in certain points, narrow in others, susceptible of contracting
or enlarging its dimensions, and into which a great quantity of fluids are
poured by means of different ducts. The canal is divided into many parts
by anatomists:—

1. The mouth.
2. The pharynx.
3. The œsophagus.
4. The stomach.
5. The small intestines.
6. The great intestines.
7. The anus.

Two membraneous layers form the sides of the digestive canal in its whole
length. The inner layer, which is intended to be in contact with the aliments,
consists of a mucous membrane, the appearance and structure of which vary in
every one of the portions of the canal; so that it is not the same in the pharynx
as in the mouth, nor is it in the stomach like what it is in the œsophagus, &c.
In the lips and the anus this membrane becomes confounded with the skin. The
second layer of the sides of the digestive canal is muscular; it is composed of
two layers of fibres, one longitudinal, the other circular. The arrangement, the
thickness, the nature of the fibres which enter into the composition of these
strata are different, according as they are observed in the mouth, in the œso-
phagus, or in the large intestine, &c. A great number of blood-vessels go to,
or come from, the digestive canal; but the abdominal portion of this canal
receives a quantity incomparably greater than the superior parts. This presents
only what are necessary for its nutrition, and the inconsiderable secretion of
which it is the seat; whilst the number and the volume of the vessels that
belong to the abdominal portion show that it must be the agent of a con-
siderable secretion. The chyliferous vessels arise exclusively from the small
intestine.

As to the nerves, they are distributed to the digestive canal in an order
inverse to that of the vessels; that is, the cephalic parts, *cervical* and *pectoral*,
receive a great deal more than the abdominal portion, the stomach excepted,
where the two nerves of the eighth pair terminate. The other parts of the canal
scarcely receive any branch of the cerebral nerves. The only nerves that are
observed, proceed from the *subdiaphragmatic* ganglions of the great sympathetic.

We shall see, further on, the relation that exists between the modes of distribution of the nerves, and the functions of the superior and inferior portions of the digestive canal.

The bodies that pour fluids into the digestive canal, are—

1. The *digestive mucous membrane.*

2. *Isolated follicles* that are spread in great number in the whole length of this membrane.

3. The *agglomerated follicles* which are found at the isthmus of the throat, between the *pillars* of the *velum* of the palate, and sometimes at the junction of the œsophagus and the stomach.

4. The *mucous glands,* which exist in a greater or less number in the sides of the cheeks, in the roof of the palate, and around the œsophagus.

5. The *parotid,* the *submaxillary,* and *sublingual glands,* which secrete the saliva of the mouth, the liver, and the pancreas; the first of which pours the bile, the second the pancreatic juice, by distinct canals, into the superior part of the small intestine, called duodenum. All the digestive organs contained in the abdominal cavity are immediately covered, more or less completely, by the serous membrane called the peritonæum. This membrane, by the manner in which it is disposed, and by its physical and vital properties, is very useful in the act of digestion, by preserving to the organs their respective relations, by favouring their changes of volume, by rendering easy the sliding motions which they perform upon each other and upon the adjoining parts.

The surface of the mucous digestive membrane is always lubricated by a glutinous adhesive matter, more or less abundant, that is seen in greatest quantity where there exist no follicles,—a circumstance which seems to indicate that these are not the only secreting organs. A part of this matter, to which is given generally the name of *mucus,* continually evaporates, so that there exists habitually a certain quantity of vapours in all the points of the digestive canal. The chemical nature of this substance, as taken at the intestinal surface, is still very little known. It is transparent, with a light grey tint; it adheres to the membrane which forms it; its taste is salt, and its acidity is shown by the reagents; its formation still continues some time after death. That which is formed in the mouth, in the pharynx, and in the œsophagus, goes into the stomach mixed with the saliva and the fluids of the mucous glands, by movements of deglutition, which succeed each other at near intervals. According to this detail, it would appear that the stomach ought to contain, after it has been some time empty of aliments, a considerable quantity of a mixture of mucus, of saliva, and follicular fluid. This observation is not proved, at least in the greatest number of individuals. However, in a number of persons, who are evidently in a particular state, there exist, in the morning, in the stomach, many ounces of this mixture. In certain cases it is foamy, slightly troubled, very little viscous, holding suspended some flakes of mucus: its taste is quite acid, not disagreeable, very sensible in the throat, acting upon the teeth, so as to diminish the polish of their surface, and rendering their motion upon each other more difficult. This liquid reddens paper stained with turnsole.

In the same individual, in other circumstances, and with the same appearances as to colour, transparency, and consistency, the liquid of the stomach had no savour, nor any acid property; it is a little salt; the solution of potash, as well as the nitric and sulphuric acids, produced in it no apparent change.

The diaphragm, and the abdominal muscles, produce a sort of perpetual agitation of the digestive organs contained in the abdominal cavity; they exert upon them a continual pressure, which becomes sometimes very considerable.

The digestive actions which by their union constitute digestion are:—

1. The apprehension of aliments.
2. Mastication.
3. Insalivation.
4. Deglutition.

5. The action of the stomach.
6. The action of the small intestines.
7. The action of the large intestines.
8. The expulsion of the fæcal matter.

All the digestive actions do not equally contribute to the production of chyle; the action of the stomach, and that of the small intestines, are alone absolutely necessary. The digestion of solid food requires generally the eight digestive actions: that of drinks is much more simple; it comprehends only apprehension, deglutition, the action of the stomach, and that of the small intestines.

The mastication and deglutition of the food being effected, we have now to notice the action of the stomach on the aliment; chemical alterations will now present themselves to our examination. In the stomach, the food is transformed into a matter proper to animals, which is named *chyme*.

The accumulation of food in the stomach is accompanied by many sensations, of which it is necessary to take account:—At first it is an agreeable feeling, or the pleasure of a want satisfied. Hunger is appeased by degrees; the general weakness that accompanied it is replaced by an active state, and a feeling of new force. If the introduction of food is continued, we experience a sensation of fulness and satiety, which indicates that the stomach is sufficiently replenished; and if, contrary to this instinctive information, we still persist to make use of food, disgust and nausea soon arrive, and they are very soon followed by vomiting. These different impressions must not be attributed to the volume of the aliments alone. Everything being equal in other respects, food, very nutritive, occasions, more promptly, the feeling of satiety. A substance which is not very nourishing does not easily calm hunger, though it is taken in great quantity.

The mucous membrane of the stomach, then, is endowed with considerable sensibility, since it distinguishes the nature of substances which come in contact with it. This property is very strongly marked if an irritating poisonous substance is swallowed; intolerable pain is then felt. We also know that the stomach is sensible to the temperature of food. We cannot doubt that the presence of the aliments of the stomach causes a great excitement, from the redness of the mucous membrane, from the quantity of fluid it secretes, and the volume of vessels directed there; but this is favourable to chymification. This excitement of the stomach influences the general state of the functions. The time that the aliments remain in the stomach is considerable, generally several hours: it is during this stay that they are transformed into chyme.

Changes of the aliments in the stomach.—It is more than an hour before the food suffers any apparent change in the stomach, more than what results from the perspiratory and mucous fluids with which they are mixed, and which are continually renewed. The stomach is uniformly distended during this time; but the whole extent of the pyloric portion afterwards contracts, particularly that nearest the splenic portion, into which the food is pressed. Afterwards, there is nothing found in the pyloric portion but chyme, mixed with a small quantity of unchanged food. The best authors have agreed to consider the chyme as a homogeneous substance, pultaceous, greyish, of a sweetish taste, insipid, slightly acid, and preserving some of the properties of the food. This description leaves much to be explained.

The result of Dr. Magendie's experiments are as follows:—

A. There are as many sorts of chyme as there are different sorts of food, if we judge by the colour, consistence, appearance, &c.; as we may easily ascertain by giving different simple alimentary substances to dogs to eat, and killing them during the operation of digestion. He frequently found the same result in man, in the dead bodies of criminals, or persons dead by accident.

B. Animal substances are generally more easily and completely changed than vegetable substances. It frequently happens that these last traverse the whole intestinal canal without changing their apparent properties. He has frequently seen in the rectum, and in the small intestines, the vegetables which are used in

soup, spinach, sorrel, &c., which had preserved the most part of their properties; their colour alone appeared sensibly changed by the contact of the bile.

Chyme is formed particularly in the pyloric portion. The food appears to be introduced slowly into it; and during the time they remain, they undergo transformation. The doctor believes, however, that he has observed frequently chymous matter at the surface of the mass of aliments which fill the splenic portion; but the aliments in general preserve their properties in this part of the stomach.

All the alimentary substances are not transformed into chyme with the same promptitude.

Generally the fat substances, the tendons, the cartilages, the concrete albumen, the mucilaginous and sweet vegetables, resist more the action of the stomach than the caseous, fibrinous, and glutinous substances. Even some substances appear refractory; such as the bones, the epidermis of fruits, their stones, and whole seeds, &c. In determining the digestibility of food, the volume of the portions swallowed ought to be taken into account. The largest pieces, of whatever nature, remain longest in the stomach; on the contrary, a substance which is not digestible, if it is very small, such as grape-stones, does not rest in the stomach, but passes quickly with the chyme into the intestine. In respect of the facility and quickness of the formation of chyme, it is different in every different individual. It is evident, after what has been said, that to fix the necessary time for the chymification of all the food contained in the stomach, we ought to take into account their quantity, their chemical nature, the manner in which the mastification acts upon them, and the individual disposition. However, in four or five hours after an ordinary meal, the transformation of the whole of the food into chyme is generally effected. (See page 296.)

DYSPEPSIA. (From the Greek,—with difficulty I concoct.)—Indigestion. This very common disease consists generally in a want of appetite, a sudden and transient distension of the stomach, eructations of various kinds, heartburn, pain in the region of the stomach, perhaps vomiting, rumbling noise in the bowels, and frequently costiveness or diarrhœa. A long train of nervous symptoms are also frequent attendants. In some cases a few only of the above symptoms are present, while in others many additional ones are experienced, such as severe pains in the head and chest, and various affections of the sight, as slight degrees of amaurosis, double vision, &c.

It occurs at all ages, but chiefly in persons between thirty and forty years of age, and is principally to be met with in those who devote much time to study, or who lead either a very sedentary or an irregular life. A great singularity attendant on it is, that it may and often does continue a great length of time, without any aggravation or remission of the symptoms. Grief and uneasiness of mind, intense study, profuse evacuations, excess in venery, hard drinking, particularly of spirituous liquors, and the abuse of tea, tobacco, opium, and other narcotics, immoderate repletion, and over-distension of the stomach, and much exposure to moist and cold air, when without exercise, are the causes which usually occasion dyspepsia. Dyspepsia never proves fatal, unless when, by a very long continuance, it give rise to some other disease, as organic lesions of the viscera, dropsy, or phthisis; but it is at all times very difficult to remove, and particularly so in warm climates. It is often a secondary and symptomatic disease, caused by structural alterations of some part of the stomach; and there are few organic diseases in the neighbouring viscera from which the stomach does not become weakened, and indigestion result.

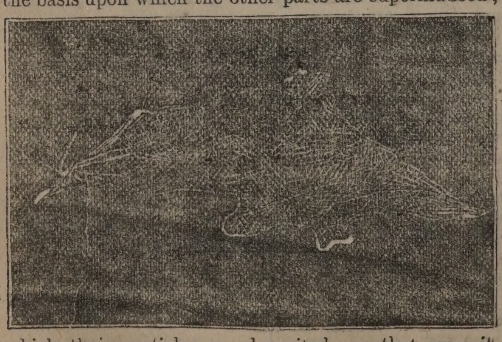
The term dyspepsia has been very vaguely used, and a great variety of symptoms, arising from a proportionate number of different morbid states, have been associated under the same name. The writings of Marcus and Broussais have led many to refer these symptoms universally to inflammatory states of different parts of the gastro-enteric membrane; a doctrine which, like most others of a similar exclusive character, is at once confuted by an appeal to actual

observation; and which is especially pernicious in a practical point of view, inasmuch as it too often inflicts leeches and starvation, where they can very ill be borne. It is indeed true that dyspeptic symptoms are often produced by the inflammatory states alluded to; and it is true, as illustrated by Dr. Wilson Philip, that when functional derangement has existed for a length of time, the vascular actions of the part become affected, and inflammation is set up; but if we are content to be guided simply by what is to be seen on the dissection of those who, when living, have been subject to dyspepsia, we shall be convinced that chronic inflammation is far from being the general cause of this affection. The morbid states which give rise to dyspeptic symptoms appear to be atony and torpor of the organs; morbid irritability, distinct from an inflammatory state; depraved secretion; and chronic inflammation. To these, severally or combined in various degrees, restricted to particular parts, or more extensively involving the alimentary canal, the diversity of symptoms, included under the term indigestion, may for the most part be traced.

I quote the following and other articles from Dr. Southwood Smith's very interesting work, "The Philosophy of Health," in two volumes, with many cuts. Cox, King William-street, London, and all booksellers; price 5s. This elaborate work enters very extensively into the physical and mental constitution of man, and is well worth reading.

FIRST OR PRIMARY STRUCTURE OF THE BODY.—Dr. Smith says,—"The first primary tissue of the body is the peculiar substance termed *membrane*. It has been already stated that one of the ultimate forms of animal matter is a coagulable substance, becoming concrete or solid under the process of coagulation. The commencement of organization seems to be the arrangement of this concrete matter into straight thready lines, at first so small as to be imperceptible to the naked eye. Vast numbers of these threads successively uniting, at length form a single thread of sufficient magnitude to be visible, but still smaller than the finest thread of the silkworm. If the length of these threads be greater than their breadth, they are called fibres; if, on the contrary, their breadth exceed their length, they are termed plates or laminæ. By the approximation of these fibres or plates in every possible direction, and by their accumulation, combination, and condensation, is constituted the simplest form of organized substance, the primary tissue called membrane.

"Membrane once formed is extensively employed in the composition of the body; it is indeed the material principally used in producing, covering, containing, protecting, and fixing every other component part of it. In a word, it forms the basis upon which the other parts are superinduced; or rather the mould into



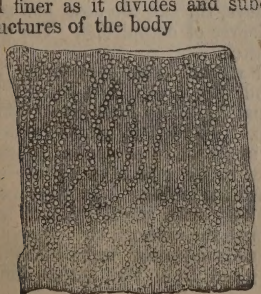
A single film of the cellular tissue (composing the substance of the body), lifted up and slightly distended. —*From Smith.*

which their particles are deposited; so that were it possible to remove every other kind of matter, and leave this primary tissue unaltered in figure and

undiminished in bulk, the general form and outline of the body, as well as the form and outline of all its individual parts, would remain unchanged. Membrane exists under several distinct forms; a knowledge of the peculiarities of which will materially assist us in understanding the composition of the body. The simplest form of membrane, and that which is conceived to constitute the original structure from which all the others are produced, is termed the *cellular*. When in thin slices, *cellular membrane* appears as a semi-transparent and colourless substance; when examined in thicker masses, it is of a whitish or greyish colour. It consists of minute threads, which cross each other in every possible direction, leaving spaces between them, and thus forming a mesh or network, not unlike the spider's web. The term cells, given to these interspaces, is employed rather in a figurative sense than as the expression of the fact; for there are no such distinct partitions as the term cell implies. The best conception that can be formed of the arrangement of the component parts of this structure is, to a suppose a substance consisting of an infinite number of slender thready lines crossing each other in every possible direction. The interspaces between these lines during life, and in the state of health, are filled with a thin exhalation of an aqueous nature, a vapour rather than a fluid, rendering and keeping the tissue always moist. This vapour consists of the thinner part of the blood, poured into these interstitial spaces by a process hereafter to be described, termed secretion. When occupying those spaces, it makes no long abode within them, but is speedily removed by the process of absorption. In health, these two operations exactly equal each other; but if any cause arise to disturb the equilibrium, the vapour accumulates, condenses, and forms an aqueous fluid, which distends the cells and gravitates to the most depending parts. Slightly organized as this tissue is, and indistinct as its vital functions may be, it is obvious that it must be the seat of at least two vital functions, secretion and absorption.

"It is certain that the interspaces or cells of this membrane have no determinate form or size, that they communicate freely with each other, and that this communication extends over the whole body; for if a limb which has been infiltrated be frozen, a thousand small icicles will be formed, assuming the shape of the containing cells, some of which are found to be circular, and others cylindrical, and so on. If air or water escape into any particular part of the body, it is often effused over the whole extent of it, and butchers are observed to inflate animals by making a puncture in some part where the cellular tissue is loose, and from this one aperture the air is forced to the most distant parts of the body.

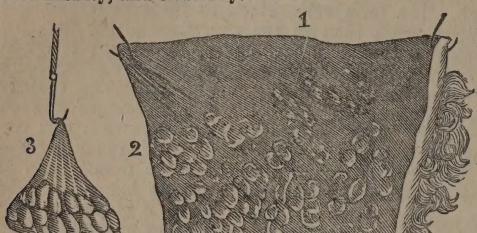
"Cellular membrane, variously modified and disposed, forms the main bulk of all the other solid parts of the body, constituting their common envelope and bond of union, and filling up all their interstices. It is dense or loose, coarse or fine, according to its situation and office. Wherever it is subject to pressure, it is dense and firm, as in the palm of the hand and the sole of the foot; around the internal organs it is more loose and delicate, and it becomes finer and finer as it divides and subdivides, in order to envelope the soft and tender structures of the body



A portion of cellular tissue, very highly magnified, showing the strings of globules of which its ultimate fibres are by some supposed to consist.

"According to some who have carefully examined with the microscope its component threads, they consist of minute particles of a globular figure; other microscopical observers regard the cellular threads as coagulated or condensed animal substance, perfectly amorphous (without form).

"Every part of this tissue is penetrated by arteries, veins, absorbents, and nerves, endowing it with properties truly vital, though in a less degree than any of the other primary tissues; and varied and important as the uses are which it serves in the economy, the most manifest, though certainly not the only ones, are those which depend upon its physical properties of cohesion, flexibility, extensibility, and elasticity.



1, a portion of adipose (fatty) tissue; 2, minute bags containing the fat; 3, a cluster of the bags, separated and suspended

"The tissue which contains the fat, termed the *adipose*, is the second form of membrane; it is obviously a modification of the cellular, from which it differs, both in the magnitude of its fibres, whence it constitutes a tougher and coarser web, and in their arrangement; for it is so disposed as to form distinct bags in which the fat is contained. Adipose tissue consists of rounded packets, separated from each other by furrows; each packet is composed of small spheroidal particles; each particle is again divisible into still smaller grains, which, on minute inspection, present the appearance of vesicles filled with the adipose matter.

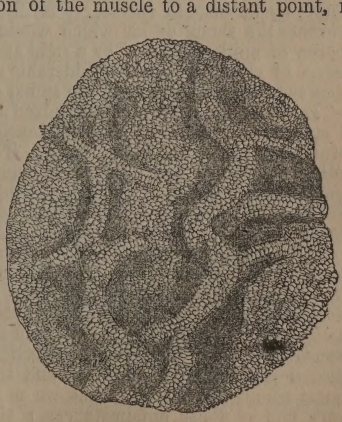
"The cells of the cellular tissue, as has been shown, are continuous over the whole body; but each adipose vesicle is a distinct bag, having no communication whatever with any other. The cellular tissue is universally diffused; but the adipose is placed only in particular parts of the body; principally beneath the skin, and more especially between the skin and the abdominal muscles, and around some of the organs contained in the chest and abdomen, as the heart, the kidneys, the mesentery, and the omenta. In most of these situations some portion of it is generally found, whatever be the degree of leanness to which the body may be reduced; while in the cranium, the brain, the eye, the ear, the nose, and several other organs, there is none, whatever be the degree of corpulency. The uses of the fat, which are various, will be stated hereafter.

"The third form of membrane is termed the *serous*. Like the adipose, *serous membrane* is a modification of the cellular, and, like it also, it is limited in its situation to particular parts of the body, that is, to its three great cavities, namely, the head, the chest, and the abdomen. To the two latter it affords an internal lining, and to all the organs contained in all the three cavities it affords a covering. By its external surface it is united to the wall of the cavity or the substance of the organ it invests; by its internal surface it is free and unattached: whence this surface is in contact only with itself, forming a close cavity or shut sac, having no communication with the external air. Smooth and polished, it is rendered moist by a fluid which is supposed to be exhaled in a gaseous state from the serum of the blood; and from this serous fluid the

membrane derives its name. Though thin, serous membrane is dense, compact, and of great strength in proportion to its bulk: it is extensible and elastic; extensible, for it expands with the dilatation of the chest in inspiration; elastic, for it contracts with the diminished size of the chest in expiration. In like manner, it stretches with the enlargement of the stomach during a hearty meal, and contracts as the stomach gradually diminishes on emptying itself of its contents. It is furnished with no blood-vessels large enough to admit the colouring matter of the blood; but it is supplied with a great number of the colourless vessels termed exhalents, with the vessels termed absorbents, and with a few nerves. It indicates no vital properties, but those which are common to the simple form of the primary tissue. Its specific uses are to afford a lining to the internal cavities; to furnish a covering to the internal organs; by its polished and smooth surface, to allow a free motion of those organs on each other, and by the moisture with which it is lubricated, to prevent them from adhering together, however closely, or for however long a period they may be in contact.

"The fourth form of membrane, the *fibrous*, named from the obvious arrangement of its component parts, consists of longitudinal fibres, large enough to be visible to the naked eye, placed parallel to each other, and closely united. Sometimes these fibres are combined in such a manner as to form a continuous and extended surface, constituting a thin, smooth, dense, and strong membrane, such as that which lines the external surface of bones termed *periosteum*, or the internal surface of the skull (dura mater). At other times they form a firm and tough expansion (aponeurosis) which descends between certain muscles, separating them from each other, and affording a fixed point for the origin or insertion of neighbouring muscles; or which is stretched over muscles, and sometimes over even an entire limb, in order to confine the muscles firmly in their situation, and to aid and direct their action. Fibrous membrane also constitutes the compact, strong, tough, and flexible bands used for tying parts firmly together, termed *ligaments*, principally employed in connecting the bones with each other, and particularly about the joints; and lastly, fibrous membrane forms the rounded white cords in which muscles often terminate, called *tendons*, the principal use of which is to connect the muscles with the bones, and to serve as cords or ropes to transmit the action of the muscle to a distant point, in the accomplishment of which purposes their operation appears to be entirely mechanical.

"The fifth form of membrane, the *mucous*, derives its name from the peculiar fluid with which its surface is covered, called mucus, and which is secreted by numerous minute glands, imbedded in the substance of the membrane. As serous membrane forms a shut sac, completely excluding the air, mucous membrane, on the contrary, lines the various cavities which are exposed to the air, such as the mouth, the nostrils, the windpipe, the gullet, the stomach, the intestines, the urinary organs, and the uterine system. Its internal surface, or that by which it is attached to the passages it lines, is smooth and dense; its external surface, or that which is exposed to the contact of the air, is soft and pulpy, like the pile of velvet. It



A portion of the stomach, showing its internal surface, or mucous coat.

bears a considerable resemblance to the external surface of the rind of the ripe peach, owing to the ciliated membrane.

"Unlike all the other tissues of this class, the mucous membranes are the immediate seat of some of the most important functions of the economy; in the lung, respiration; in the stomach, of digestion; in one part of the intestine, of chylification; in another, of excretion; while in the mouth and nose, they are the seat of the animal functions of taste and smell; and they are highly organized in accordance with the importance of the functions they perform.

"The last form of membrane which it is necessary to our present purpose to particularize is that which constitutes the external covering of the body, and which is called the *skin*. The skin is everywhere directly continuous with the mucous membranes that line the internal passages, and its structure is perfectly analogous. Both the external and the internal surface of the body may be said therefore to be covered by a continuous membrane, possessing essentially the same organization, and almost identically the same chemical composition. The skin is an organ which performs exceedingly varied and important functions in the economy, to the understanding of which it is necessary to have a clear conception of its structure; some further account of it will therefore be required; but this will be more advantageously given when the offices it serves are explained.

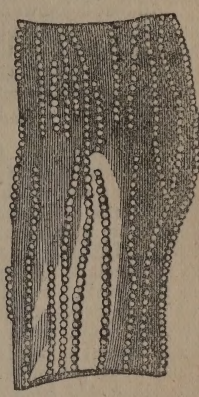
"Such is the structure, and such are the properties, of the first distinct form of organized matter. The second primary tissue, termed the *cartilaginous*, is a substance intermediate between membrane and bone. The nature of its organization is not clearly ascertained. By some anatomists, it is regarded as a uniform and homogeneous substance, like firm jelly, without fibres, plates, or cells; others state that they have been able to detect in it longitudinal fibres, interlaced by other fibres in an oblique and transverse direction, but without determinate order. All are agreed that it is without visible vessels or nerves: not that it is supposed to be destitute of them, but that they are so minute as to elude observation. Its manifest properties are wholly mechanical. It is dense, strong, inextensible, flexible, and highly elastic. It is chiefly by its property of elasticity that it accomplishes the various purposes it serves in the economy. It is placed at the extremities of bones, especially about the joints, where, by its smooth surface, it facilitates motion, and, by its yielding nature, prevents the shock or jar which would be produced were the same kind and degree of motion effected by a rigid and inflexible substance. Where a certain degree of strength with a considerable degree of flexibility are required, it supplies the place of bone, as in the spinal column, the ribs, and the larynx.

"The third distinct form of organized matter is termed the OSSEOUS tissue. Bone is composed of two distinct substances, an animal and an earthy matter: the former organic, the latter inorganic. The animal or organic matter is analogous both in its nature and in its arrangement to cellular tissue; the earthy or inorganic matter consists of phosphoric acid combined with lime, forming phosphate of lime. The cellular tissue is aggregated into plates or laminæ, which are placed one upon another, leaving between them interspaces or cells.

"All the primary tissues which have now been considered consist of precisely the same proximate principles. Albumen is the basis of them all; with the albumen is always mixed more or less gelatin, together with a minute quantity of saline substance: to the osseous tissue is superadded a large portion of earthy matter. With the exception of the mucous, the organization of all these tissues is simple; their vital properties are low in kind and in degree; their decided properties are physical, and the uses they serve in the economy are almost wholly mechanical. But we next come to a tissue widely different in every one of those circumstances, a tissue consisting of a new kind of animal matter, and endowed with a property not only peculiar to itself, but proper to living substance, and characteristic of a high degree of vital power. MUSCULAR TISSUE, the fourth distinct form of animal matter, commonly known under the

name of flesh, is a substance resembling no other in nature. It consists of a soft and pulpy substance, having little cohesive power, arranged into fibres which are distinctly visible to the naked eye, and which are disposed in a regular and uniform manner, being placed close and parallel to each other. These fibres are everywhere pretty uniformly the same in shape, size, and general appearance, being delicate, soft, flattened, and, though consisting of a tender pulp, still solid. When examined under the microscope, fibres, which to the naked eye appear to be single threads, are seen to divide successively into smaller threads, the minutest or the ultimate division not exceeding, as is supposed, the 40,000th part of an inch in diameter. On the other hand, the fibres which are large enough to be visible to the naked eye are obviously aggregated into bundles of different magnitude in different muscles, but always of the same uniform size in the same muscle.

"The ultimate thread, or the minutest division of which the muscular fibre is susceptible, is called a filament; the smallest thread which can be distinguished by the naked eye is termed a fibre; and the bundle which is formed by the union of fibres is denominated a fasciculus. The proper muscular substance is thus arranged into three distinct forms progressively increasing in size,—the filament, the fibre, and the fasciculus. The filament, the fibre, the fasciculus, as well as the muscle itself, formed by the aggregation of fasciculi, is each enclosed in its own distinct sheath of cellular membrane.

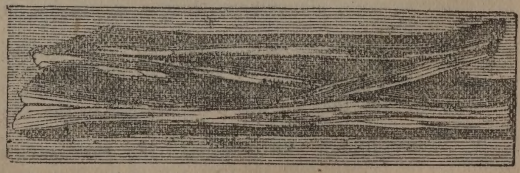


Ultimate fibres of muscle, greatly magnified, showing the strings of globules of which they are supposed to consist.

"Every ultimate thread or filament appears to be provided with the ultimate branch of an artery, vein, and nerve. These vessels are seen ramifying on the surface of the delicate web of membrane that encloses the pulp, but cannot be traced into it.

"The proximate principle of which the muscular pulp is composed is fibrin. From the pulp, when inclosed in its sheath of membrane, albumen, jelly, various salts, and a peculiar animal extract called osmazone, are also obtained; but these substances are probably derived from the membranous, not the muscular, matter. Fibrin contains a larger proportion of azote—the element peculiar to the animal body, and by the possession of which its chemical composition is distinguished from that of the vegetable—than any other animal substance.

"Muscular tissue possesses a slight degree of cohesion, a high degree of flexibility and extensibility, but no degree of elasticity; for although muscle, considered as a compound of muscular substance and membrane, be highly



Portion of the trunk of a nerve; dividing into branches.

elastic, yet this property is probably altogether owing to the membranous matter in which it is enveloped. Its peculiar and distinctive property is vital, not physical, and consists in the power of diminishing its length, or of contracting or shortening itself, on the application of a stimulus. This pro-

perty, which is termed contractility, is the great, if not the sole, source of motion in the body. Without doubt, elasticity and gravity, under the generating and controlling power of contractility, aid in accomplishing various kinds of motion. Thus membranes, tendons, ligaments, cartilages, and bones, by their physical and mechanical properties, modify, economize, facilitate, concentrate, and direct the motive power generated by the pure muscular substance; but still the only real source of motion in the body is muscular tissue, and the only mode in which motion is generated is by contractility. This will be more fully understood hereafter."

(DR. SMITH) ON SECRETIONS.—"Since every secreting organ is copiously supplied with blood, it follows that a great part of the blood of the body is always circulating in secreting organs; and, indeed, it is to afford materials for the action of these organs that the blood itself is formed.

"How do these organs act upon the blood?

"All that is known of the course of that portion of the blood which flows through an organ of secretion is, that it passes into arteries of extreme minuteness, which are spread out upon the external walls of the elementary secreting bodies, and which, as far as they can be traced, pass into capillary veins,—nowhere terminating by open mouths—nowhere presenting visible outlets or pores; their contents probably transuding through their thin and tender coats by the process of endosmose.

"As it is flowing through these capillary arteries, the blood undergoes the transformations effected by secretion, forming—1. The fluids which are added to the aliment, and which accomplish its solution, and change it into chyme. 2. The fluids which are added to the chyme to convert it into chyle, and both to chyle and lymph, to assist in their assimilation. 3. The fluids which, poured into the cavities, facilitate automatic or voluntary movements. 4. The fluids which serve as the media to the organs of the senses by which external objects are conveyed to the sentient extremities of the nerves for their excitement. 5. The fluids which, deposited at different points of the cellular tissue, when more aliment is received than is needed, serve as reservoirs of nutriment to be absorbed when more aliment is required than can be afforded by the digestive organs. 6. The fluids which are subsequently to be converted into solids. 7. The fluids which are eliminated from the common mass, whether of fluids or solids, to be carried out of the system as excrementitious substances. 8. In addition to all these substances, which are indispensable to the preservation of the individual, those which are necessary to the perpetuation of the species.

"In order to form any conception of the mode in which the secreting organs act upon the blood, so as to elaborate from it such diversified substances, it is necessary to consider the chemical composition of the different products of secretion, and the degrees in which they really differ from each other, and form the common mass of blood out of which they are eliminated.

"By chemical analysis, it is established that all the substances which are formed from the blood by the process of secretion are either water, albumen, mucus, jelly, fibrin, oil, resin, or salts; and, consequently, that all the secretions are either aqueous, albuminous, mucous, gelatinous, fibrinous, resinous, olcaginous, or saline.

"1. AQUEOUS SECRETIONS.—From the entire surface of the skin, and also from that of the lungs, there is constantly poured a quantity of water, derived from the blood, mixed with some animal matters, which, however, are so minute in quantity that they do not communicate to the aqueous fluid any specific character.

"2. ALBUMINOUS SECRETIONS.—All the close cavities, as the thorax, the abdomen, the pericardium, the ventricles of the brain, and even the interstices of the cellular tissue, are constantly moistened by a fluid which is termed serous, because it is derived from the serum of the blood. This serous fluid consists of albumen in a fluid form, and it differs from the serum of the blood chiefly in

containing in equal volumes a smaller proportion of albumen. Membranes of all kinds consist essentially of coagulated albumen; and the albumen, as constituting these tissues, differs from albumen as existing in the serum of the blood only in being unmixed with extraneous matter, and in being in a solid form.

"3. Mucous Secretions.—As all the close cavities, or those which are protected from the external air, are moistened with a serous fluid, so all the surfaces which are exposed to the external air, as the mouth, the nostrils, the air-passages, and the whole extent of the alimentary canal, are moistened with a mucous fluid. Mucus does not exist already formed in the blood. It is always the product of a gland. Some of the mucous glands are among the most elaborate of the body; still the main action of the gland seems to be to coagulate the albumen of the blood; for the basis of mucus is coagulated albumen. The fluid that lubricates the mucous surfaces in their whole extent, the saliva, the gastric juice, the tears, the essential part of the fluid formed in the testes and in the ovaria, are mucous secretions. Hence the most complex and elaborate functions of the body, respiration, digestion, reproduction, are intimately connected with the mucous secretions; nevertheless, as far as regards their chemical nature, the mucous differ but slightly from the albuminous secretions; and it is probable that a slight change in the secreting organ is sufficient to convert the one into the other. By the irritation of mercury on the salivary glands, the saliva, properly of a mucous, is sometimes converted into a substance of an albuminous nature; and irritation in some of the serous membranes occasionally causes them to secrete a mucous fluid.

"4. Gelatinous Secretions.—The proximate principle termed jelly abounds plentifully in several of the solids of the body, and more especially in the skin; but jelly does not exist already formed in the blood. Yet it is not the product of a gland, neither is there any known organ by which it is formed. Out of the body, albumen is capable of being converted into jelly by digestion in dilute nitric acid: this conversion is probably effected by the addition of a portion of oxygen to the albumen. Albumen contains more carbon and less oxygen than jelly; the proportions of hydrogen and nitrogen in both being nearly the same. According to MM. Gay Lussac and Thénard, the elements of albumen and jelly are—

	Carbon.	Oxygen.	Hydrogen.	Nitrogen.
Albumen . .	52.883	23.872	7.54	15.765
Jelly . .	47.881	27.227	7.914	16.988

The conversion of albumen into jelly is incessantly going on in the system; and the process accomplishes most extended and important uses. In the lungs, at the moment of inspiration, oxygen enters into the blood in a state of loose combination: but in the system, at every point where the conversion of albumen into jelly takes place, oxygen probably enters into a state of chemical combination with albumen; and the new proximate principle, jelly, is the result. The agent by which this conversion is effected appears to be the capillary artery: the primary object of the action is the production of a material necessary for the formation of the tissues of which jelly constitutes the basis, as the skin; but a secondary and most important object is the production of animal heat; the carbon that furnishes one material of the fire being given off by the albumen at the moment of its transition into jelly; and the oxygen that furnishes the other material of the fire being afforded to the blood at the moment of inspiration. This view affords a beautiful exposition of the reason why jelly forms so large a constituent of the skin in all animals. The great combustion of oxygen and carbon, the main fire that supports the temperature of the body, is placed where it is most needed, at the external surface.

"5. Fibrinous Secretions.—The pure muscular fibre, or the basis of the flesh, is identical with the fibrin of the blood. It contains a larger proportion of nitrogen, the peculiar animal principle, and is consequently more highly animalized, than the preceding substances. It appears to be simply discharged

from the circulating blood by the capillary arteries, and deposited in its appropriate situation; no material change in its constitution being, it would seem necessary to fit it for its office.

"A third most important agent in the process of secretion is some influence derived from the nervous system.

"1. It is proved, by direct experiment, that the destruction of the nervous apparatus, or of any considerable portion of it, stops the process of secretion. By experiments performed by Mr. Brodie, it is ascertained that the secretion of the urine is suspended by the removal or destruction of the brain, though the circulation be maintained in its full vigour by artificial respiration.

"2. The section, and still more the removal, of a portion of the sentient nerves of the stomach (the par vagum or eighth pair), according to some experimentalists, deranges and impedes, according to others, totally arrests, the process of digestion."

ORGANIC AND ANIMAL LIFE.—By organic life is meant the life of the substances of the body; by animal life is meant the power of the will and the mind over the whole, by the aid of the nervous system. As will be seen in these extracts from Dr. Smith, the substance of the body may have life in it for a short period when the animal power has left it.

"The organs and functions of the animal life are incapable of continuity of action. No voluntary muscle can maintain its action beyond a given time; no effort of the will can keep it in a state of uninterrupted contraction; relaxation must alternate with contraction; and even this alternate action cannot go on long without rest. No organ of sense can continue to receive impression after impression without fatigue. By protracted exertion the ear loses its sensibility to sound, the eye to light, the tongue to savour, and the touch to the quality of bodies about which it is conversant. The brain cannot carry on its intellectual operations with vigour beyond a certain period; the trains of ideas with which it works become, after a time, indistinct and confused; nor is it capable of reacting with energy until it has remained in a state of rest proportioned to the duration of its preceding activity.

"And this rest is sleep. Sleep is the repose of the senses, the rest of the muscles, their support and sustenance. What food is to the organic, sleep is to the animal life. Nutrition can no more go on without aliment, than sensation, thought, and motion without sleep.

"But it is the animal life only that sleeps: death would be the consequence of the momentary slumber of the organic. If, when the brain betook itself to repose, the engine that moves the blood ceased to supply it with its vital fluid, never again would it awake. The animal life (*the power of the will and mind*) is active only during a portion of its existence; the activity of the organic life (*substance of the body*) is never for a moment suspended: and in order to endow its organs with the power of continuing this uninterrupted action, they are rendered incapable of fatigue: fatigue, on the contrary, is inseparable from the action of the organs of the animal life (*the mind and will*); fatigue imposes the necessity of rest; rest is sleep, and sleep is renovation.

"Between all the functions of the organic life there is a close relation and dependence. Without the circulation there can be no secretion; without secretion, no digestion; without digestion, no nutrition; without nutrition, no new supply of circulating matter, and so through the entire circle. But the functions of the animal life are not thus dependent on each other. One of the circle may be disordered without much disturbance of the rest; and one may cease altogether, while another continues in vigorous action. Sensation may be lost, while motion continues: and the muscle may contract, though it cannot feel. One organ of sense may sleep while the rest are awake. One intellectual faculty may be in operation while others slumber. The muscle of volition may act, while there is no consciousness of will. Even the organs of the voice and of progression may perform their office while the sensorium is deeply locked in sleep

"The two lives are born at different periods, and the one is in active operation before the other is even in existence. The first action observable in the embryo is a minute pulsating point. It is the young heart propelling its infant stream. Before brain, or nerve, or muscle can be distinguished, the heart is in existence and in action; that is, the apparatus of the organic function of the circulation is built up and in operation before there is any trace of an animal organ. Arteries and veins circulate blood, capillary vessels receive the vital fluid, and out of it form brain and muscle, the organs of the animal, no less than the various substances that compose the organs of the organic life. The organic is not only anterior to the animal life, but it is by the action of the organic that existence is given to the animal life. The organic life (*substance*) is born at the first moment of existence; the animal life (*will and mind*) not until a period comparatively distant—the epoch emphatically called the period of birth, namely, the period when the new being is detached from its mother; when it first comes into contact with external objects; when it carries on all the functions of its economy by its own organs, and consequently enjoys independent existence.

"The functions of the organic life are perfect at once. The heart contracts as well, the arteries secrete as well, the respiratory organs work as well, the first moment they begin to act as at any subsequent period. They require no teaching from experience, and they profit nothing from its lessons. On the contrary, the operations of the brain, and the actions of the voluntary muscles, feeble and uncertain at first, acquire strength by slow degrees, and attain their ultimate perfection only at the adult age. How indistinct and confused the first sensations of the infant! Before it acquire accuracy, precision, and truth, how immense the labour spent upon perception! Sensations are succeeded by ideas; sensations and ideas coalesce with sensations and ideas; combinations thus formed suggest other combinations previously formed, and these a third, and the third a fourth, and so is constituted a continuous train of thought. But the infantile associations between sensation and sensation, between idea and idea, and between sensations and ideas, are, to a certain extent, incorrect, and to a still greater extent inadequate; and the misconception necessarily resulting from this early imperfection in the intellectual operations is capable of correction only by subsequent and more extended impressions. During its waking hours, a large portion of the time of the infant is spent in receiving impressions which come to it every instant from all directions, and which it stores up in its little treasury; but a large portion is consumed in the far more serious and difficult business of discrimination and correction. (*The soul, or immortal part, is developing its powers as the organism of the brain comes to maturity.*)

"The organic life may exist after the animal life has perished. The animal life is extinguished when sensation is abolished, and voluntary motion can be performed no more. But disease may abolish sensation and destroy the power of voluntary motion, while circulation, respiration, secretion, excretion, in a word, the entire circle of the organic functions continues to be performed. In a single instant apoplexy may reduce to drivelling fatuity the most exalted intellect, and render powerless and motionless muscles of gigantic strength; while the action of the heart and the involuntary contractions of the muscles may not only not be weakened, but may act with preternatural energy. In a single instant apoplexy may even completely extinguish the animal life, and yet the organic may go on for hours, days, and even weeks; while catalepsy, perhaps the most singular disease to which the human frame is subject, may wholly abolish sensation and volition, while it may impart to the voluntary muscles the power of contracting with such unnatural energy and continuity, that the head, the trunk, the limbs may become immovably fixed in whatever attitude they happen to be at the moment the paroxysm comes on. In this extraordinary condition of the nervous system, however long the paroxysm last, and however complete the abolition of consciousness, the heart continues to beat, and the pulse to throb

and the lungs to respire, and all the organic organs to perform their ordinary functions. Dr. Jebb gives the following description of the condition of a young lady who was the subject of this curious malady :—

"'My patient was seized with an attack just as I was announced. At that moment she was employed in netting; she was in the act of passing the needle through the mesh; in that position she became immovably rigid, exhibiting, in a pleasing form, a figure of death-like sleep, beyond the power of art to imitate, or the imagination to conceive. Her forehead was serene, her features perfectly composed. The paleness of her colour, and her breathing, which at a distance was scarcely perceptible, operated in rendering the similitude to marble more exact and striking. The position of her fingers, hands, and arms was altered with difficulty, but preserved every form of flexure they acquired: nor were the muscles of the neck exempted from this law, her head maintaining every situation in which the hand could place it, as firmly as her limbs.'

"In this condition of the system the senses were in a state of profound sleep; the voluntary muscles, on the contrary, were in a state of violent action; but this action not being excited by volition, nor under its control, the patient remained as motionless as she was insensible. The brain was in a state of temporary death; the muscle in a state of intense life. And the converse may happen: the muscle may die, while the brain lives; contractility may be destroyed, while sensibility is perfect; the power of motion may be lost, while that of sensation may remain unaffected. A case is on record which affords an illustration of this condition of the system. A woman had been for some time confined to her bed, labouring under severe indisposition. On a sudden she was deprived of the power of moving a single muscle of the body; she attempted to speak, but she had no power to articulate; she endeavoured to stretch out her hand, but her muscles refused to obey the commands of her will; yet her consciousness was perfect, and she retained the complete possession of her intellectual faculties. She perceived that her attendants thought her dead, and was conscious of the performance upon her own person of the services usually paid to the dead; she was laid out, her toes were bound together, her chin was tied up; she heard the arrangements for her funeral discussed, and yet she was unable to make the slightest sign that she was still in the possession of sense, feeling, and life.

"In one form of disease, then, the animal life, both the sensitive and the motive portions of it, may perish; and in another form of disease, either the one or the other part of it may be suspended, while the organic life continues in full operation: it follows that the two lives, blended as they are, are distinct, since the one is capable of perishing without immediately and inevitably involving the destruction of the other.

"And, finally, as the organic life is the first born, so it is the last to die; while the animal life, as it is the latest born, and the last to attain its full development, so it is the earliest to decline, and the first to perish. In the process of natural death, the extinction of the animal is always anterior to that of the organic life. Real death is a later, and sometimes a much later event than apparent death. An animal appears to be dead when, together with the abolition of sensation and the loss of voluntary motion, respiration, circulation, and the rest of the organic functions can no longer be distinguished; but these functions go on some time after they have ceased to afford external indications of their action. In man, and the warm-blooded animals in general, suspension or submersion extinguishes the animal life, at the latest, within the space of four minutes from the time that the atmospheric air is completely excluded from the lung; but did the organic functions also cease at the same period, it would be impossible to restore an animal to life after apparent death from drowning and the like. But however complete and protracted the abolition of the animal functions, reanimation is always possible as long as the organic organs are capable of being restored to their usual vigour. The cessation of the animal life is but the

first stage of death, from which recovery is possible; death is complete only when the organic, together with the animal functions, have wholly ceased, and are incapable of being re-established.

"In man, the process of death is seldom altogether natural. It is generally rendered premature by the operation of circumstances which destroy life otherwise than by that progressive and slow decay which is the inevitable result of the action of organized structure. Death, when natural, is the last event of an extended series, of which the first that is appreciable is a change in the animal life and in the noblest portion of that life. The higher faculties fail in the reverse order of their development; the retrogression is the inverse of the progression, and the noblest creature, in returning to the state of non-existence, retraces step by step each successive stage by which it reached the summit of life.

"And now the processes of life at an end, the body falls within the dominion of the powers which preside universally over matter; the tie that linked all its parts together, holding them in union and keeping them in action, in direct opposition to those powers dissolved, it feels and obeys the new attractions to which it has become subject; particle after particle that stood in beautiful order fall from their place; the wonderful structures they composed melt away: the very substances of which those structures were built up are resolved into their primitive elements; these elements, set at liberty, enter into new combinations, and become constituent parts of new beings; those new beings in their turn perish; from death springs life, and so the changes go on in an everlasting circle.

"RELATION BETWEEN THE PHYSICAL CONDITION AND HAPPINESS.—Life depends on the action of the organic organs. The action of the organic organs depends on certain physical agents. As each organic organ is duly supplied with the physical agent by which it carries on its respective process, and as it duly appropriates what it receives, the perfection of the physical condition is attained; and according to the perfection or imperfection of the physical condition, supposing no accident interrupt its regular course, is the length or the brevity of life.

"It is conceivable that the physical condition might be brought to a high degree of perfection, the mind remaining in a state but little fitted for enjoyment; because it is necessary to enjoyment that there be a certain development, occupation, and direction of the mental powers and affections; and the mental state may be neglected, while attention is paid to the physical processes. But the converse is not possible. The mental energies cannot be fully called forth while the physical condition is neglected. Happiness presupposes a certain degree of excellence in the physical condition; and, unless the physical condition be brought to a high degree of excellence, there can be no such development, occupation, and direction of the mental powers and affections as is requisite to a high degree of enjoyment.

"That state of the system in which the physical condition is sound is in itself conducive to enjoyment; while a permanent state of enjoyment is in its turn conducive to the soundness of the physical condition. It is impossible to maintain the physical processes in a natural and vigorous condition, if the mind be in a state of suffering. The bills of mortality contain no column exhibiting the number of persons who perish annually from bodily disease, produced by mental suffering; but every one must occasionally have seen appalling examples of the fact. Every one must have observed the altered appearance of persons who have sustained calamity. A misfortune, that struck to the heart, happened to a person a year ago; observe him some time afterwards; he is wasted, worn, the miserable shadow of himself; inquire about him at the distance of a few months, he is no more.

"THE DIVISION OF HUMAN LIFE into periods or epochs is not an arbitrary distinction, but is founded on constitutional differences the system,

dependent on different physiological conditions. The periods of infancy, childhood, boyhood, adolescence, manhood, and old age, are distinguished from each other by external characters, which are but the outward signs of internal states. In physiological condition, the infant differs from the child, the child from the boy, the boy from the man, and the adult from the old man, as much in physical strength as in mental power. There is an appointed order in which these several states succeed each other; there is a fixed time at which one passes into another.

"In Mr. Finlaison's report, printed by the House of Commons on the 30th of March, 1829, there are six original observations on the mortality of as many separate sets of annuitants of the male sex.

"From an examination and comparison of these observations, it appears—1st. That the rate of mortality falls to a minimum at the close of the period of childhood. 2nd. That from this point the mortality rises until the termination of adolescence or the commencement of adult age. 3rd. That from the commencement of adult age the mortality again declines, and continues to decline to the period of perfect maturity. And, 4th. That from the period of perfect maturity, the mortality rises, and uniformly, without a single exception, returns, at the age of forty-eight, to the point at which it stood at the termination of adolescence. These results clearly indicate that certain fixed periods are marked by nature as epochs of human life; and that at the date of the recorded facts which furnish the data for these observations, and as far as regards the class of persons to which they relate, the age of forty-eight was the exact point at which the meridian of life was just passed, and a new epoch began.

"The observation is founded on the large mass of 9,347 lives and 4,870 deaths. From this observation, it appears that, at the age of thirteen, the mortality out of a million is 5,742. At the age of twenty-three, it is 15,074, being 9,332 more than at the close of childhood. At the age of thirty-four, the period of complete manhood, it falls to 11,707, being 3,367 less than at the close of adolescence. At the age of forty-eight, the mortality returns to 14,870,—all but identically the same as at twenty-three, the adult age. From the age of forty-eight, when, as has been stated, life just begins to decline from its meridian, the mortality advances slowly, but in a steady and regular progression. Thus, at the age of fifty-eight it is 29,185, being 14,315 more than at the preceding decade, or almost exactly double. At the age of sixty-eight, it is 61,741, being 32,556 more than at the preceding decade, or more than double. At the age of seventy-eight, it is 114,255, being 52,514 more than at the preceding decade. At the age of eighty-eight, it is 246,803, being 132,548 more than at the preceding decade.

"During the first year of infancy, as has been shown, the mortality out of a million is 180,492. At the extreme age of eighty-four, it is 178,130, very nearly the same as in the first year of infancy. Greatly as the mortality of all the other epochs of life is affected by country, by station, by a multitude of influences arising out of these and similar circumstances, yet the concurrent evidence of all observation shows that at this and the like advanced ages the mean term of existence is nearly the same in all countries, at all periods, and among all classes of society. Thus, among the nobility and gentry of England, the expectation of life at eighty-four is four years: among the poor fishermen at Ostend, it is precisely the same. M. Deparcieux, who wrote just ninety years ago, establishes the expectation of life at that time in France, at the same age, to have been three and a half years: and Halley, who wrote 120 years ago, and whose observations are derived from documents which go back to the end of the seventeenth century, states the expectation of life at eighty-four to be two years and nine months.

"From these statements, then, it is obvious, that from the termination of infancy at three years of age, a decade of years brings childhood to a close, during

which the mortality, steadily decreasing, comes to its minimum. Another decade terminates the period of adolescence, during which the mortality as steadily advances. A third decade changes the young adult into a perfect man, and during this period, the golden decade of human life, the mortality again diminishes; while, during another decade and a half, the mortality slowly rises, and returns at the close of the period to the precise point at which it stood at adult age. Thus the interval between the period of birth and that of adult age includes a term of twenty-three years. The interval between the period of adult age and that when life just begins to decline from its meridian, includes a term of twenty-four years: consequently, a period more than equal to all the other epochs of life from birth to adult age is enjoyed, during which mortality makes no advance whatever. The term of years included in the several epochs that intervene between birth and adult age is rigidly fixed. In England, for example, the expectation of life at the present day, for the mass of the people, as compared with that of the mass at Ostend, which, as has been shown, is the same as that of the whole of Europe, is as follows:—

At birth ..	41½ years.	At 32 ..	32 years.	At 57 ..	16 years.
12 ..	46¾ „	37 ..	28¾ „	62 ..	13 „
17 ..	41½ „	42 ..	25½ „	67 ..	10¼ „
22 ..	38⅝ „	47 ..	22¼ „	72 ..	8 „
27 ..	35¼ „	52 ..	19 „	77 ..	6 „

"It should be borne in mind, that the females of the mass exceed in duration the lives of the males at every age by two or three years.

"The following may be assumed as the maximum average duration of human life' of both sexes collectively:—

50	55	60	65	70	75	80	85
Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.
23	19	16	13	11	8	6	3"

Dr. Horner, in "Three Letters addressed to a Non-Medical Friend," gives a very plain account of the absorbent lymphatic system, which I quote. The letters were addressed to myself.—J. S.

"Allow me, in brief recapitulation, to bring again before you the principal circumstances and facts which are more fully given in the volume alluded to, (*On the Nature of the Water Cure*). I again say, be not impatient of repetitions, as long as they bring before you useful and important knowledge: it serves the purpose of riveting it more firmly in your mind.

"You remember that I stated that mastication of food is the commencing part of the process of digestion; and that due care should be taken to make it as perfect as possible. I alluded to the value of good teeth, and to the proper use of them in slow and careful mastication of food. Again, I pointed out the source, the use, and the solvent power of the saliva, or spittle, in its mixing with the food, and in preparing it for the further action of the gastric juice in the stomach. You recollect, dear sir, that the food undergoes the first great change of its nature in the stomach, and *there* it becomes *chyme*, according to technical language. The word is Greek, and means a juice or fluid mass. It remains in the healthy stomach an average time of two or three hours, subjected to the specific action of that organ and its secretion, the much-talked of *gastric juice*. When it is fitted for the next movement downwards, the *chymous mass* passes through the lower opening of the stomach, called the pyloric orifice. We have here again a Greek word for the part, namely, *pyloros*, which means a *porter* or *doorkeeper*. The term is good, for no matter is allowed by it to pass forwards into the first bowel unless it be in a proper state for it. The *pyloros*, or *pylorus*, is usually very vigilant; that is, it is very sensitive. Indeed, it is

endowed with an elective power suitable for its important office. Through this sensitive and elective power it will raise a commotion in the stomach, and cause vomiting, when anything of very important nature presents itself for admission into the first bowel, called the *duodenum*. This term, I told you, is of Latin origin, and means *twelve;* because, say the anatomists, its length is about twelve inches.

"Respecting this elective power, or peculiar sensibility of the pyloric orifice of the stomach, I have to apprise you that it is frequently much deranged and destroyed by the intemperate use of stimulants; so that it loses its healthy condition, and then allows improper matters to pass into the small bowels, to interfere with their important function, and thus to cause unhealthy chyle. Frequently also, from the same cause of intemperance, especially in the use of undiluted spirits or dram-drinking, this pyloric orifice becomes the seat of incurable and fatal disease, namely, schirrus or cancer. Under this disease the sensibility is morbidly increased, and constant vomiting takes place as soon as the contents of the stomach reach it for admission into the duodenum. On examination of such cases after death, I have usually found the part ulcerated, but this does not always take place. Napoleon Bonaparte died of this disease; but he had an hereditary predisposition to it from his father, who also died of it. Napoleon had too much shrewdness, common sense, and love of life to stultify himself by those habits which so often cause cancer of the pyloric orifice of the stomach.

"When the alimentary mass has passed into the duodenum, it is called *chyle* by nearly all physiologists. This is also a Greek term, meaning *juice*, or *sap*, or *fluid squeezed out*. I have ventured, on just grounds, I think, to continue the name of *chyme*, for reasons given in the other book. However, it does not much matter about the name. You must keep in mind, however, that the mass undergoes great change in the duodenum, where it meets and is mixed with two other fluid secretions of particular properties. One is the bile, which is brought from the liver by a duct or canal; the other fluid is the *pancreatic juice*, brought from the *pancreas* by another duct. Besides these two fluids or secretions, there is also the special fluid which is secreted or formed by the lining membrane of the duodenum, and which is of a very solvent nature. The alimentary mass soon passes onwards into the next part of the bowels, called the *jejunum*, a name given from the Latin, and meaning *fasting*, because the bowel is always empty on dissection, after death. The mass is next passed forwards into the *ilium*, the next and last of the small bowels. These are so called because of their comparatively small dimensions. In the two latter ones, the jejunum and ilium, is chiefly absorbed from the alimentary mass the *milk-like* fluid to which alone I would apply the term *chyle*, and not to the whole mass from which it is taken, as do other physiologists. This chyle is absorbed by the absorbent vessels which in this place and office are denominated *lacteals*, because of their *milk-like* contents, which they absorb from the alimentary mass. I shall say more about these lacteals anon. Here we must leave the remaining mass, which takes its course downwards into the larger bowels called the cœcum, the colon, and the rectum. You must keep in mind that the soluble or fluid part of this alimentary mass is absorbed by veins into the blood; whilst the insoluble matter, chiefly, is passed onwards and downwards. This absorption is not, however, to the extent that some writers would have us to suppose. I would just remind you that the liquid part of the fæces, or excrementitious matter, is chiefly secreted from the blood on the internal surface of the large intestine called the colon, where the fæces are first formed.

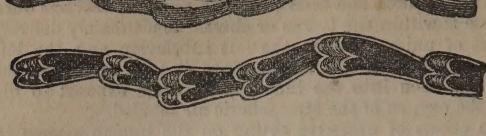
"To return to the lacteals or lacteal absorbents. The chyle is the nutritious part of the alimentary mass, the essence of aliment. It is conveyed from the small intestines by these lacteals to a kind of oval-shaped bag, the reservoir of the chyle, and therefore called, in technical language, the *receptaculum chyli*. It rests on the front of the spine of the loins, and receives or is formed by the

termination of the large trunks of these lacteals, and the trunk of the lymphatic absorbents of the lower extremities. In this reservoir or receptacle, the chyle and the lymph carried by the lymphatics are mixed together. At its upper part it is formed into a large tube or duct, and then takes the name of *thoracic duct*, because its principal course is within the *thorax* or chest. It ultimately delivers its contents into the part of union between the left subclavian and the left jugular vein; and, being mixed with the venous blood, it soon arrives at the right side of the heart; and then into the lungs, to be there exposed to the assimilating influence of the oxygen of the atmospheric air inhaled.

"Let us glance at the effects of excessive eating on the human system in another direction. I mean the excess of *nitrogenous* or *azotized* elements. When the supply of such food becomes much beyond the wants of the system for the renewal of the muscular, nervous, and cellular tissues, you must not suppose that it can, in any way, be stored up in solid flesh, in the manner that non-nitrogenous food causes fat to be stored up. You must bear in mind that the increase of muscular substance depends on the exercise of the muscles. Certainly this increase cannot take place without a proportionate supply of plastic elements of food; but do remember that no degree of richness of blood, or amount of proteine plastic elements, can produce increase of muscular substance and muscular power. Remember that any accumulation of such nutritive matter in the blood can serve no purpose but that of evil, and to produce disease.

"We are constantly witnessing the fact that those who indulge in what is called high living, as to quantity and quality of food, are proportionately liable to disease and death. Those organs of the body which can serve, in a limited degree, to relieve it of excessive fulness and richness of blood through their functions of excretion, become disordered and diseased from excitement and over-action; especially the liver and the kidneys, the liver excreting hydro-carbonaceous elements, and the kidneys those of a nitrogenous nature. Of the catalogue of evil consequences are to be reckoned rheumatism, gout, apoplexy, and palsy, and various inflammatory diseases; and life itself is placed on a slippery foundation. Thus, dear sir, we too often see the advantages of riches insanely overbalanced by the things they are made to bring upon their possessors, whilst the sons and daughters of poverty and want have often the compensating blessings of health and long life. I need not tell you that not one of a thousand of the latter class duly appreciates the advantages he enjoys; for it is more of necessity than of choice that he is in such relation to the means of them.

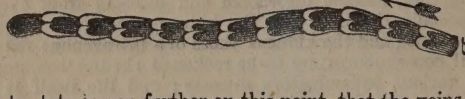
"The instrumentality or apparatus of the absorbent function has been termed *general* and *special*. Blood-vessels and membranes are the general apparatus. The special apparatus consists in a certain system of vessels exclusively for the purpose; these are the lacteals and the lymphatics; having also a certain system of glands in connection. The lacteal absorbents have been already mentioned by me, as the means of removing the nutrient part of the food from the small intestines to the thoracic duct, by which it is conveyed, mixed up with the lymph, to be commingled again with venous blood; and, after due assimilation in the lungs, to constitute the nutrient part of arterial blood, for the purposes of nutrition. The lacteals are the special absorbents for their important office, as noticed above, and they arise from the internal surface of the small intestines. I wish you to keep in mind, dear sir, that the other special absorbents, the lymphatics, which carry a *water-like* fluid (and hence their name of *lymphatics; lympha* is a Latin word for water), are to be found in every tissue, both of the internal and external parts of the body. The structure of both kinds of absorbents is very similar to that of the veins, which also act as absorbents, in addition to their office of carrying dark and impure carbonised blood. The coats of the veins, however, are thicker and not so transparent as those of the lacteals and lymphatics. Here you have a view of an absorbent vessel in its internal and external surfaces.



A magnified view of an absorbent vessel. 1 represents the external surface, with the jointed appearance produced by the valves. 2 represents the same vessel laid open, showing the arrangement of the valves.

"When these absorbents are fully distended by their contents, they have a jointed appearance, as you see here. The point of each joint is caused by a pair of valves on the internal surface. Here, again, dear sir, is sunbeam evidence of design. These valves are evidently for the purpose of preventing the reflux or backward motion of the fluid within. You recollect that the same means answers the same end in the structure of the veins, and especially in the large ones of the lower extremities. It is this which gives a knotted appearance to the veins of some people, who suffer from varicose legs.

(The following engraving [B] shows the structure of the veins, with the provision to prevent the return of the blood in the same veins. It will be noticed that there is a perforation in the centre of the valve, and on the blood being forced back, it presses on the sides, and closes the centre perforation.—J. S.)



"Allow me to state to you further on this point, that the veins and absorbents have not, like the arteries, an impelling engine, as the heart, to force forwards their contents; therefore they need and have the auxiliary means of valves. The arteries have no valves, because they receive the impulse of the heart, with which they are connected at their outset in the aorta. They have, besides, an inherent power of circulating their own contents, arterial blood, which is the oxygenised, nutritious, and scarlet-coloured vital fluid.

"Doubtless, the lymphatic absorbents arise from every part of the body. I wish you to keep in mind that although, like veins, they anastomose with or open into each other, they do not, like them, proceed from small to larger branches, and from these branches to form large trunks. The absorbents, remember, continue of about the same size in their whole length, from their origin to their termination. Remember, also, that the chief of these lymphatic vessels are arranged in two orders or sets; one of them is on the external surface of the body, the other is disposed in a deeper course, and more especially to accompany the large trunks of blood-vessels.

"It is of importance that you remember that every lacteal and every lymphatic absorbent of the human body goes, in some part or other of its course, through the absorbent glands. These are called *conglomate*, in contradistinction to others called *conglomerate* glands, which are made up of a congeries or collection of smaller ones; whereas, these are single or one in substance. I must apprise you that the absorbent glands are small and usually oval-shaped bodies, and are enclosed in a membranous covering. I give a magnified view of them below.

"The glands of the lacteal absorbents, you recollect, are also called *mesenteric glands*, because they are located in the large and powerful membrane, the *mesentery*, which has its name from its principal office of retaining the intestines in

their proper position. On page 328 I present you with a view of the absorbent glands of the lacteals, with part of the small intestine, and the receptaculum chyli, with the thoracic duct, &c.

"The glands of the lymphatic absorbents are of various sizes, and are placed in certain appropriate parts of the body. They are sometimes single, but more frequently they are in groups or masses, as in the axillæ or armpits, and in the groins, at the bending of the knee, and under the jaw-bone. They readily enlarge from irritating causes. When an absorbent gland inflames and enlarges, it is called a *bubo*, in professional language, which, in Greek, means a *swelling*.

FIG. I.

FIG. I.—1. Absorbent vessels, called *vasa inferentia*, entering (2) the gland. 3. Absorbent vessels emerging from the gland, called *vasa efferentia*, and forming (4) a common trunk.

FIG. II.—1. Trunk of absorbent vessel entering a gland. 2. Gland apparently composed entirely of convoluted vessels. 3. Vessels emerging from the gland, and forming (4) a common trunk.

FIG. II.

"The absorbent vessels which enter a gland are termed *vasa inferentia*, or in-going vessels. These enter at the part of it most distant from the heart. Again, those which leave it are termed *vasa efferentia*, or out-going vessels, and are seen to emerge on the side next to the heart, and are fewer in number than those which enter it. The whole substance of an absorbent gland appears to be made up of the *vasa inferentia* convoluted or rolled up on each other, and having free communication with each other.

FIG. III.

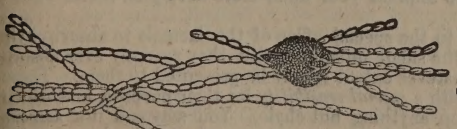
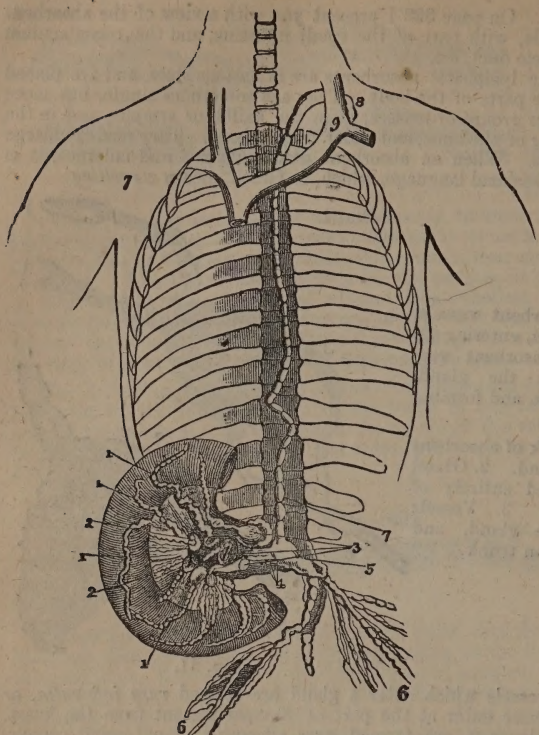


FIG. III.—Small lymphatic vessels passing their contents through a gland.

"Although, as I have already stated, the absorbents have no impelling organ to send forwards their contents, yet the fluid they contain is known to move onwards with considerable force; and we reasonable suppose, therefore, that they possess a vital and inherent power for the purpose.

"Again I counsel you, dear sir, to remember the particular facts and circumstances noticed by me in this brief account of the absorbent system; for, assuredly, the subject has a constant bearing on the health and disease of the human body; and for success of treatment the practitioner must understand and



1. Lacteal vessels emerging from the mucous surface of the intestines. 2. First order of mesenteric glands. 3. second order of mesenteric glands. 4. The great trunks of the lacteals emerging from the mesenteric glands, and pouring their contents into (5) the receptacle of the chyle. 6. The great trunks of the lymphatic or general absorbent system terminating in the receptacle of the chyle. 7. The thoracic duct. 8. Termination of the thoracic duct at (9) the angle formed by the union of the internal jugular vein with the subclavian vein.

VIEW OF THE COURSE OF THE THORACIC DUCT, FROM ITS ORIGIN TO ITS TERMINATION.

think of it. There are yet other and very interesting particulars which I must next bring before you. If I refer again to some things already mentioned, the repetition will serve, I say, to impress your mind more deeply on useful knowledge.

"Mark, then, in reference to the special office of the lacteals to absorb chyle from the alimentary mass in the small intestines, that they scarcely ever absorb any other fluid matter, to whatever extent it may be presented to them. These lacteals, then, are endowed with a *special sensibility* for their purpose, and which makes them refuse to take up anything but chyle. You may call it a *nervous power of election*. But this, dear sir, is one instance of the like innumerable ones in the human system, where *special sensibility* belongs to organs and parts for their *special purposes;* and is, indeed, beyond the power of the greatest intellect to understand. It is a part of the wonderful endowments which are absorbed in the animal economy; but no more is known of them. They are truly of the greatest moment for health, and for life itself. I shall again meet with this subject in pursuing our principal ones of health and disease, and its treatment; and I think that I shall have the opportunity of giving you further illustration of it.

"The lymphatics which are distributed over the whole human frame are not limited to the absorption of a certain fluid, as the lacteals are. The lymphatics absorb matters of various kinds, but it is always of an organized nature, and passing through its stages of purification or fitness for the purposes of life. It was formerly believed that the contents of lymphatics were of a refuse nature, but this is now found to be erroneous.

"The absorbent glands are supposed to exert a certain influence on the fluids which flow through them in the absorbent vessels, and to assimilate those fluids more nearly to the nature of the blood. That they do exert a power of altering the nature of such fluids is supported by the fact that the injection of even bland fluids directly into the blood, without their passage through these glands, is often of most serious consequence: even fatal effects have followed.

"There are two organic functions of the human body, of which I have not written to you, dear sir. They are ever in intimate relation with the chief subjects of these letters. In meeting with the names of these two processes, non-medical readers are frequently puzzled to understand their true nature and different uses. I allude to secretion and excretion. I can only undertake, in my limited space, to make a few brief remarks concerning them, yet it will suffice for the end in view.

"The word *secretion* is from the Latin word *secreno*, to separate, to sever, to put asunder or apart. The entire matter of the human body is literally secreted or formed from the blood, which is formed from food, with the aid of air, water, heat, electricity, and light. These things have been repeatedly explained to you. But the term *secretion* is used in a more special sense, and is applied to certain matters, both fluid and solid, which are secreted or formed by certain parts of the body, called *secreting organs* or *instruments*. The principal ones are glands of various sizes, and for various purposes; and serous and mucous membranes also form extensive secreting surfaces, which perform functions of great importance for the health and well-being of the animal economy.

"I must not forget to tell you that the word secretion was first used on the erroneous supposition that it was literally and only a separation of different matters from the blood, in which they existed. The truth is, that they are formed or elaborated out of its constituent elements. The liver secretes, or elaborates, or forms bile from the carbonized and impure venous blood, which is carried through it for the purpose. Again, the breasts of the mother secrete or elaborate milk from the nutritious arterial blood circulating through them for the purpose. The stomach, by the apparatus on its lining membrane, secretes the gastric juice. The kidneys secrete urine. The salivary glands in and around the mouth secrete saliva. The wax of the ear is secreted by a suitable apparatus on its internal surface.

"You must keep in mind that all matters, fluid and solid, which are produced to serve some useful purpose in the human body, are the products of secretion. And mark you all matters which are separated from the body, to be removed as useless or noxious, are also the products of secretion. But they are called *excretions*, because they are separated from the organized substance of the body by similar processes, for the purpose of their removal from the system. Excretion is a particular form of secretion. The distinguishing difference between the two processes is, that in excretion the matter separated is either noxious or useless, and must be removed from the body; the matter separated by secretion has to serve some useful purpose in the body.

"I cannot explain to you the real nature or mode of performance of secretion; for, like that of many others of the animal system, it is unknown. It is certainly performed by the joint means of arteries, veins, nerves, and absorbents. The chief agency is, doubtless, that of the *nervous power*, and may be of a modified kind for the purpose. Membranes become the seat of secretion, and we see a great variety of its products. The membranes which line the large

and closed cavities of the human body are termed *serous membranes*, because the fluid which they secrete, and which preserves their proper and moistened condition, is *serum*. I mean the cavities of the chest and of the abdomen.

"Again, there is the *synovial membrane*, which lines the interior surface of the joints, and secretes *synovia*, a glairy fluid which is useful and necessary for locomotion.

"Then, you must consider the most extensive membrane of the body, which is called the *mucous membrane*. It lines the open cavities and canals of the body —the mouth, the stomach, and intestines; also the air-passages and the lungs. This mucous membrane secretes mucus, which adheres to its surface, and keeps it in a suitable state of moisture.

"An Italian physiologist called Malpighi, and another called Ruysh, who flourished at Amsterdam at the same time, and Müller of Berlin, all these narrowly investigated the minute structure of the secreting apparatus, and formed certain doctrines on the nature and uses of secreting sacs, and follicles, and tubes: but they differed in their opinions. Nevertheless, it is established now, that follicles, cells, and tubes constitute the principal apparatus of secretion, with some variety of arrangement of the same.

"Sometimes the apparatus or means of secretion consists in simply extended membrane; and a fine network of minute or capillary arteries, nerves, and absorbents is stretched over its secreting surface; and by the specific action of these the matter secreted is separated from the blood.

"Yet you are to keep in mind, that there are the other forms of apparatus for the purpose, namely, cryptæ, or small pits; follicles, or small bags; cœca, or small pouches; tubuli, or small tubes; which also serve for retaining the matter for a while, to be supplied according to the wants of the system.

"When these cryptæ, follicles, cœca, and tubuli are collected into close contact, and have their necessary arteries and nerves inclosed with them in a common membrane, and as one mass, they constitute a secreting gland. You are to consider a secreting gland as a collection of these secreting bodies connected by cellular tissue, and enveloped in a common membranous covering, and thus forming a distinct organ of secretion. Such are the liver, the pancreas, the spleen, and the kidneys.

"There are very many interesting particulars in connexion with the present subject; but my limited space allows not of further particularisation. I must not leave it, however, without some notice to you of the extent of secreting apparatus. Think, that wherever nutrition is carried on, there, also, is secretion and its apparatus. The extent cannot be correctly stated. All the internal surfaces are studded with secreting bodies. The skin is covered with them, for the secretion of insensible perspiration; also for that of the oily matter which gives to it its softness. Again, the hairs are produced by a secreting process. But further, think of the great organs of the body, the liver, the lungs, the pancreas, and spleen: also the brain. Again, think of the organs of the senses, the eyes, the nose, the tongue, and the ears: nay, every point of the body, and even the bones, have innumerable organs of secretion.

"I wish you, dear sir, ever to keep in mind, that the great and indispensable agent in this process or function of secretion is *organic nervous power:* this is undoubted. Just, in familiar illustration of the fact, let me call your attention to what you are already aware of. You know that the sight, and even the thought itself, of agreeable food, fills the mouth with a secretion of saliva; in common parlance, it *makes the mouth water*. Again, music or agreeable society at dinner, or other meal, increases the appetite, and favours digestion. You well know, and I well know from experience, that disagreeables of any kind, affecting the mind through the brain and nerves of animal life, and, through these, the nerves of organic life, destroy the appetite of the most hungry man: the secretion of gastric juice is excited by the causes of agreeable kind, whilst it is arrested by the contrary.

"Again, you well know that grief causes a flow of tears; in other words, it causes an increased secretion of tears by the lachrymal glands. Fear will cause an increased secretion of urine. But, above all, how often have I known the fine maternal feelings which bind woman's heart to her offspring called into active exercise by the cry of her child! That cry, or the sight of her child, will at once fill her breasts with milk. Nay, it is a well-known fact, that the woman of strong maternal feelings has had the secretion of milk produced by an infant's cry when she has heard it in after years, and long past her own period of child-bearing.

"The imagination can effect secretion. Dr. S. Smith mentions the case of a female who had a great aversion to calomel. She was taking it in minute doses, unknown to herself. She was told of it, and was immediately salivated. On being persuaded that she had not taken any, the salivation ceased. Again she was told that she was taking it, the salivary glands were again excited to excessive action and salivation. In proof that it was purely the work of imagination, there was no redness of the gums or swelling of them, which always is the case in the action of calomel.

"Allow me, dear sir, to conclude this very interesting subject of secretion, to which your earnest letters have led me, by a few remarks on another point which crosses my mind regarding it. I cannot give you any satisfactory explanation of it; but how is it that, from the same vital fluid, the blood, the same kind of secreting apparatus produces the secreted matters according to the specific purposes to be served by them; and produced, too, by the same nervous power? How is it, I mean, that the breasts of the mother secrete the bland and nutritious fluid called milk, which is so suitable for infancy, and not another fluid? How is it that the liver secretes bile, and not urine? or how that the kidneys secrete urine and not bile, and so on? These are of the many *arcana*, the secret things of animal organization, which no human mind will ever penetrate. However, in reply to such questions, we may point to a difference of structure or texture of those several organs of secretion. Nevertheless, there is a cause which is, doubtless, beyond the ken of man. We see enough, however, to fill us with adoring admiration of that wisdom which is infinite, and of that design and beneficent care which incessantly provides for the well-being of man.

"We must now take a very brief consideration of the other function, namely, *excretion*. I have already informed you that this is only a particular form of *secretion*. Different matters contained by organized bodies, vegetable and animal, are continually thrown off by them to enter into other combinations, and to constitute part of the matter of the external world around us. Such rejected matters of the human body are called *excretions*. The function for the purpose is that of *excretion*.

"I must aim at the strictest brevity in treating of this form of secretion. I keep before my mind's eye the essential points in closest connexion with the chief subjects of these letters on health, disease, and its treatment. I aim at a statement of such things as bear most for illustrating these to your non-medical mind.

"There are five organs, dear sir, belonging to the human body, which may be said to be decidedly excretory in their functions; that is, which serve the purpose of separating those matters which are termed excrementitious, and which are useless, and which become noxious to the body if they be retained beyond a due time. These organs are the intestines, the kidneys, the lungs, the liver, and the skin. You know quite well that they have other purposes to serve besides; yet this one of *excretion*, for the removal of improper matters from the body, becomes an important one.

"I need not describe to you the minute anatomy of the skin; but, really, I cannot easily overrate the importance of its different functions, and more particularly of those of *excretion*, for which its structure is well adapted. I just remind you here that it is composed of three layers or coats; the internal one is

called the *cutis vera*, or true skin, of which I have already treated. The middle layer is called the *rete mucosum*, or mucous network; and it is most conspicuous in the negro, in whom it becomes the seat of colour. On the external surface of the *cutis* there is a particular and complex network of blood-vessels, nerves, and absorbents. These nerves are of both kinds, both *organic* and *animal*, that is, both *insentient* and *sentient* nerves. The *organic nerves* give power to the arteries to perform their part in the functions of the skin, and these are chiefly of an excrementitious nature. The supply of *animal nerves* to this *vascular plexus* of the skin gives to it its fine sensibility.

"I mentioned to you before, that the softness of the skin is owing to the oily matter which *sebaceous glands* secrete for the purpose; and on this oily substance depends the peculiar odour of the animal body. This odour becomes variously strong, and very peculiar, in certain states of the nervous system. I have known it more particularly affected in the *insane*.

"But, dear sir, there are certain grounds for supposing that this odour may be various in its quality, beyond our power of conception. I am thinking of the dog, the faithful but often ill-requited companion and friend of man. You know that he at once distinguishes the odour of his beloved master amid the crowd of thousands. He distinguishes by his nose where is the footstep of his master, be it in the crowded city or on the public road.

"I wish you especially to keep in mind that the skin is highly furnished with blood-vessels and nerves, and that it performs most important functions. It performs at least four; three of which are *organic*, and one is *animal;* namely, secretion, excretion, absorption, and sensation. The last-mentioned is the one *animal* function which the skin performs, and which serves, as you know, most necessary purposes.

"The principal excretion of the skin is that of the *perspiration*. This is both *sensible* and *insensible*. The former is commonly called *sweat*, the latter is invisible; but it is constantly going on, so that a great amount of matter passes, in this way, out of the human body every day. You are aware that the sweat, or visible perspiration, is the great means of regulating the heat of the body when it is exposed to a high temperature, especially in tropical climates, and in the hot summer weather of our country. The evaporation of the fluid perspired is a cooling process.

"You must not forget that *carbon* is constantly separated or excreted by the skin from the blood; and thus you perceive that in this action it aids the lungs in their great process of depuration or decarbonization. Remember, however, that another great office of the skin is to relieve the blood of its excess of water, of which hydrogen is the chief element. You see, then, that the three great organs for depurating the blood of carbon and hydrogen are the lungs, the liver, and the skin. They are closely connected in function, so that, under certain circumstances of climate and habits, they become vicarious, that is, they act for each other.

"Let me fix your attention on the extent and importance of the functions of the skin; and especially on the great fact that this extensive organ of four functions is the very appropriate field of operation for the *water cure*. No wonder that this has proved the most efficacious of all curative means ever practised against the diseases of the human body.

"Were it not that the history of the arts and sciences affords so much, and too much, evidence of the unreasonableness of mankind in rejecting and denying the value of the best of discoveries, and which afterwards became of the highest worth and greatest service to the world, one would scarcely credit that the water cure could meet with so much indifference and opposition from educated and professional men.

"As to the excretory function of the lungs, you are already aware of it from your perusal of my other treatise, "*On the Nature of the Water Cure.*" Be not impatient of repetition; I will briefly recapitulate. The lungs, you are aware,

are the chief decarbonizing organ of the body. The venous blood, with which are commingled the chyle and lymph, is the carbonized and impure blood which enters the right side of the heart, and by it is sent to the lungs, where the process of decarbonization takes place, through contact with the oxygen of the air inhaled. It is returned from the lungs to the left side of the heart in the character of *arterial, oxygenized,* and *vital blood.* It is then sent by it into all parts of the body.

"There are some particulars of great interest connected with this process, which have been proved by the experiments of Dr. Stevens, now of Malvern. I must not enter into an account of them. However, one of the ascertained facts which have been published is, that there exists a strong attraction between oxygen and carbonic acid, whatever may be that between it and carbon. In my next letter I shall have to make further mention of Dr. Stevens and his discoveries in connection with the nature and treatment of cholera; at present, therefore, I abstain from a longer statement.

"I have already mentioned to you the *elective power* of the lacteals. The matters which had been rejected by these lacteals are taken up by the veins and absorbents of the adjoining parts, and are conveyed into the blood which goes by the *vena portæ* to the liver. Now, by the appropriate function of the liver these matters undergo a further and perfect digestion. After this, they are conveyed by a short course to the heart, and thence to the lungs for their assimilation to the nature of arterial blood.

"The liver is an organ of excretion, as you now see, for the substances called carbon and hydrogen, the chief constituents of bile; and they are highly excrementitious; and the more copious the quantity of bile secreted, the larger the amount of carbon and hydrogen taken from the venous blood. Thus, as stated before, the liver is greatly auxiliary to the lungs and the skin in their work of *excretion,* and of necessary depuration of the vital fluid, the blood.

"I have next and only just to notice to you the excretory functions of the kidneys. They have nothing to do with the excretions of the liver, the lungs, and the skin, as far as *carbon* is concerned. The kidneys, you know, secrete the urine. According to the various circumstances of the human system does the quality of this secretion vary in its composition. The special office of the kidneys is to eliminate or extract the highly animal substance called *azote* or *nitrogen.* This, you know, is an elementary ingredient, and a principal substance of their excretion from the body, but not the only one. They have, indeed, a certain relation in their function to that of the skin, in the *watery fluid* which forms so large a part of the urine, and this is always in the inverse proportion of the quantity taken from the system by perspiration of the skin.

"Many different kinds of salts and other matters are to be found in the urine by chemical analysis; but I need not mention them here. The chief matter which characterizes its composition is called *urea,* which is of a highly animalized nature, and the constant excretion of which cannot be interrupted for any length of time without the most injurious and even fatal results.

"The function of the kidneys appears to be the occasional outlet for whatever is not needed in the animal system, and whatever is not of a suitable quality for a passage by the other organs of excretion, or does not find its usual and proper outlet. Often does the bile pass in the urine when the usual passage by the bowels is stopped by disease. The special matter of extraction, I repeat, is *urea* as a proximate principle, and the special elementary substance is *nitrogen* or *azote.*

"We will now, dear Sir, briefly consider the object or purpose which is served in the human body by the function of *excretion.* It is soon stated. You are aware that the grand source from which are derived the materials of the body's composition is the blood. It becomes a matter of great moment that this vital fluid be preserved in a state of purity, and adapted for the great purpose of

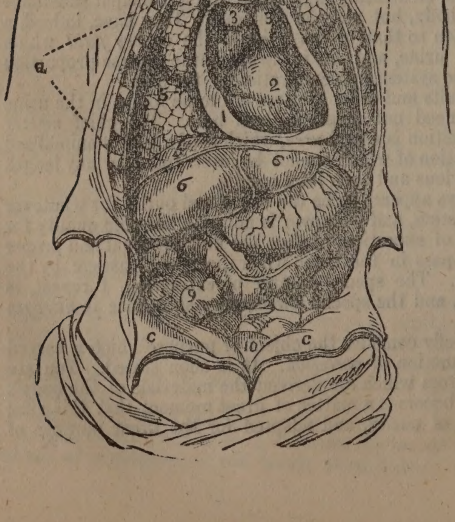
supply of the various tissues, and for the purposes of life and organization. A wrong condition of the blood, by the retention of any matters which ought to be continually removed, becomes rapidly injurious and even fatal to life.

"*Excretion* is the great depurating process of the blood. Firstly, that of the lungs cannot be at all suspended without the worst consequences, which are immediately experienced. The carbon of the venous blood, which ought to be extracted by its combination with oxygen of the atmospheric air inhaled, quickly accumulates, and mixes with the arterial blood. In a minute or two the arterial blood becomes venous, and being carried to the brain, sensibility is first destroyed; then the heart ceases to act, and death ensues. Such is the case in death by hanging, and drowning, and all similar means by which the function of respiration and decarbonization is interrupted.

"If the proper excretion of bile by the liver be stopped, it soon accumulates in the blood, and its deadly properties are experienced in the extreme depression of nervous power. If the usual excretion be not soon re-established, insensibility and death will supervene.

"I have next to apprise you, that if the excretion of *urea* by the function of the kidneys be interrupted for a short time, the blood is thereby rendered putrescent; and very soon the most malignant fever destroys the individual; coma, or stupor, and death are the result of its retention in the vital fluid. This is occasionally seen in the course of certain diseases, and becomes the cause of their fatal termination.

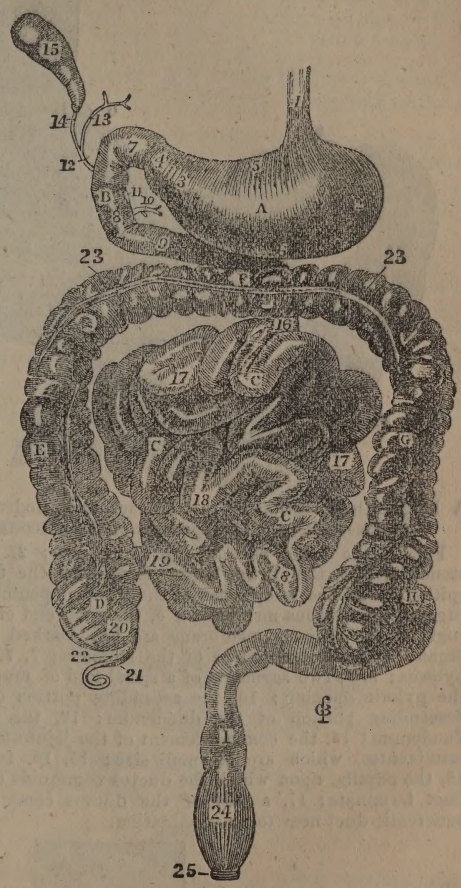
"Further, in regard to the excretion of the skin. You are aware that the internal and external covering of the body, that is, the skin and the mucous



a. The cut edges of the ribs, forming the lateral boundaries of the cavity of the thorax. *b*. The diaphragm, forming the inferior boundary of the thorax, and the division between the thorax and the abdomen. *c*. The cut edges of the abdominal muscles, turned aside, exposing the general cavity of the abdomen. 1. The cut edge of the pericardium turned aside. 2. The heart. 3. The great vessels in immediate connexion with the heart. 4. The trachea, or wind pipe. 5. The lungs. 6. The liver. 7. The stomach. 8. The large intestine. 9. The small intestines. 10. The urinary bladder in the male; the womb occupies the place in the female, and the bladder more to the right side.

membrane of the mouth and intestinal canal, are identical in structure and character; and that the whole difference of their appearance is owing to their difference of position. Hence the close sympathy between them. When the excretion of the skin is suppressed, the internal organs suffer immediately.

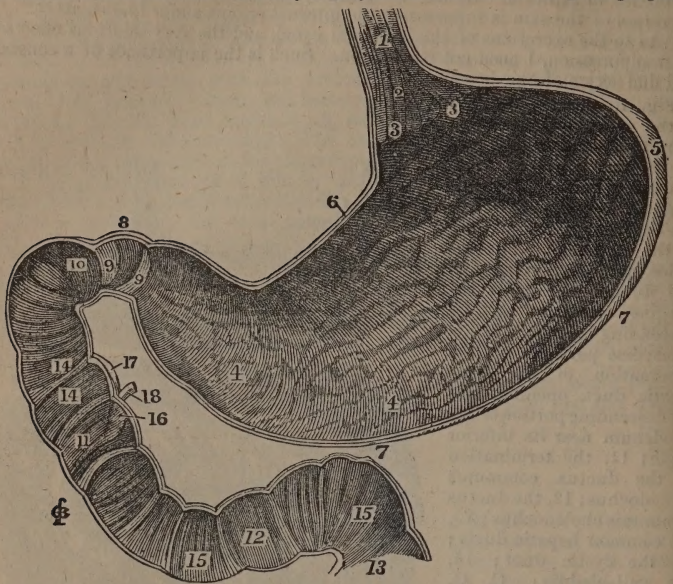
"As to the excretions of the intestinal canal, and the very injurious effects of their suppression, I need not inform you. Such is the importance of a constant and due action of the bowels.



THE STOMACH, DUODENUM, COLON, SMALL BOWEL, AND RECTUM.—*From Quain.*

Fig. 1, the œsophagus; 2, the great, or cardiac extremity of the stomach; 3, its lesser, or pyloric end; 4, a constriction corresponding with the pylorus; 5, the superior, or lesser curve of the stomach; 6, its inferior, or greater curve; B, the duodenum; 7, its ascending portion; 8, its descending portion; 9, its transverse portion; 10, the termination of the pancreatic duct, opening into the descending portion of the duodenum near its inferior angle; 11, the termination of the ductus communis choledochus; 12, the ductus communis choledochus; 13, the common hepatic ducts; 14, the cystic duct; 15, the gall-bladder; C, C, the small intestine; 16, the upper part of the jejunum where it is continuous with the duodenum; 17, 17, the jejunum; 18, 18, the ileum, of a lighter colour than the jejunum; 19, the termination of the ileum in the large intestine; D, the cœcum; 20, the cul-de-sac of the cœcum; 21, the appendix vermiformis, connected with the cœcum by a delicate mesentary, 22; E, the ascending colon; F, the transverse colon; G, the descending colon; 22, 23, the longitudinal bands of muscular fibres which produce the peculiar sacculated character of the colon; H, the sigmoid flexure of the colon; I, the rectum, in which the sacculated appearance is lost; 24, some of the longitudinal muscular fibres seen upon the rectum; 25, the sphincter ani.

"When the function of excretion, by the different organs for the purpose, is duly performed, all is well with the human body. The blood continues pure and healthful in its influence on every organ, and is suitable for the great purposes



A longitudinal section of the stomach and duodenum, showing their internal surface, with the arrangement of the mucous membrane.—*Quain.*

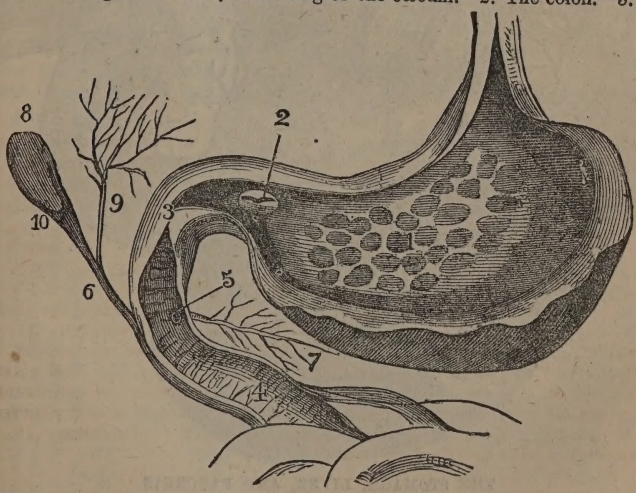
Fig. 1, the lower part of the æsophagus; 2, the cardiac orifice of the stomach; 3, 3, the abrupt border formed by the termination of the cuticular epithelium of the æsophagus at the cardiac opening of the stomach; 4, 4, the rugæ of the mucous membrane; 5, the great end of the stomach, in which the rugæ of the mucous membrane are less marked than in the middle of the organ; 6, the lesser curve of the stomach; 7, 7, the greater curve; 8, the pylorus; 9, 9, two segments of a spiral fold of mucous membrane situated in the pyloric opening; 10, the ascending portion of the duodenum; 11, the descending portion of the duodenum; 12, the transverse portion of the duodenum; 13, the commencement of the jejunum; 14, 14, the first valvulæ conniventes, which are of small size; 15, 15, larger valvulæ conniventes; 16, the papilla, upon which the ductus communis choledochus and pancreatic duct terminate; 17, a part of the ductus communis choledochus; 18, the pancreatic duct near to its termination.

MUCOUS MEMBRANE OF THE STOMACH, SHOWING THE CELLS.

of life. When all is healthful and well with the body, and only then, does it become the suitable tenement and the efficient organ of the soul, to obey its high behests, and to answer its great purpose of devotedness to the service of the infinite and adorable Creator. Do remember the imperative necessity of preserving the health and vigour of your body, if you wish fully to enjoy the only happiness to be found on earth, the happiness of a life devoted to the glory of God."—*End of Letter 1st.*

PERICARDIUM.—The membranous bag that surrounds the heart, and the arterial and venous trunks connected with it. The pericardium consists of two layers, an external or fibrous, and an internal or serous. The serous membrane lines the fibrous one, and is reflected over the heart after the manner of serous membranes in general. Its use is to secrete and contain the liquor pericardii, which lubricates the heart, and prevents attrition between the opposite surfaces of the pericardium.—*Dr. Hooper.*

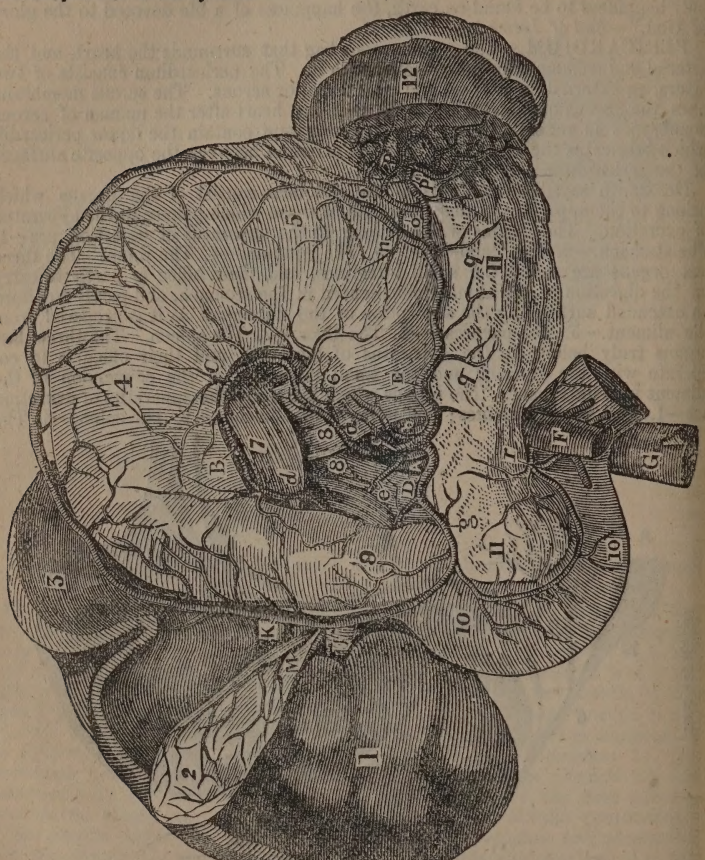
Dr. Smith says, the contents of the abdomen consist of the organs which belong to the apparatus of digestion, and of those which belong to the apparatus of excretion. The organs which belong to the apparatus of digestion are—1. The stomach.—2. The duodenum.—3. The jejunum.—4. The ilium. The three last organs are called the small intestines, and their office is partly to carry on the digestion of the aliment commenced in the stomach, and partly to afford an extended surface for the absorption of the nutriment as it is prepared from the aliment.—5. The pancreas.—6. The liver.—7. The spleen. The three last organs truly belong to the apparatus of digestion, and their office is to co-operate with the stomach and the small intestines in the conversion of the aliment into nutriment. The organs which belong to the apparatus of excretion are—1. The large intestines; consisting of the cœcum.—2. The colon.—3. The



THE STOMACH.

1. Mucous membrane, forming the rugæ. 2. Pyloric orifice opening into the duodenum. 3. Duodenum. 4. Interior of the duodenum, showing the valvulæ conniventes. 5. Termination of, 6. The biliary or choledoch duct. 7. Pancreatic duct, terminating at the same point as the choledoch duct. 8. Gall-bladder removed from the liver. 9. Hepatic duct proceeding from the liver. 10. Cystic duct proceeding from the gall-bladder, forming, by its union with the hepatic, a common trunk, the choledoch.

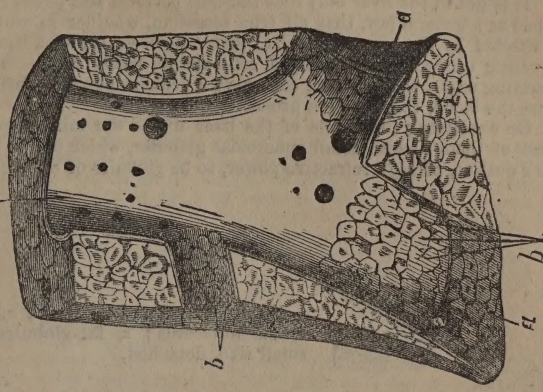
rectum. (It is the office of these organs, which are called the large intestines, to carry out of the system that portion of the alimentary mass which is not converted into nourishment.) 4. The kidneys—the organs which separate in the form of the urine an excrementitious matter from the blood, in order that it may be conveyed out of the system.



THE STOMACH, LIVER, AND PANCREAS

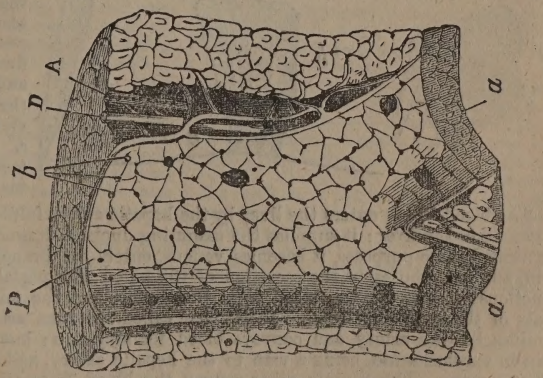
The stomach is here shown as it appears when drawn upwards; thus bringing into view the pancreas, duodenum, and spleen, with their respective arteries. 1. The right lobe of the liver. 2. The gall-bladder. 3. The left lobe of the liver. 4. The middle parts of the stomach. 5. Its larger or left extremity. 6. The junction of the œsophagus with the stomach. 7. The lower part of the left lobe of the liver. 8, 8. The crura of the diaphragm. 9. The pylora. 10, 10. The duodenum. 11, 11. The pancrea. 12. The spleen.—*Quain and Wilson.*

THE LIVER.—Until within a comparatively recent period, the entire functions of the liver have been little understood, and little has been written on the subject. "Budd on the Anatomy and Functions of the Liver" is considered the best work. The liver has been, and is now, too commonly considered, with respect to its office, as merely an organ for purifying the blood of the bile or



H, longitudinal section of an hepatic vein; *a a*, portions of the canal, from which the vein has been removed; *b b*, orifices of ultimate twigs of the vein, formed by the capillaries of single lobules.

gall and applying it to the stimulating of the bowels. This is one important office which it performs; but it has other important functions as a blood-making organ; and from this not being taken into account in the treatment of disease, serious errors are committed by giving strong doses of medicine, which so weaken the organ, that its power of forming nutritive matter for enriching the



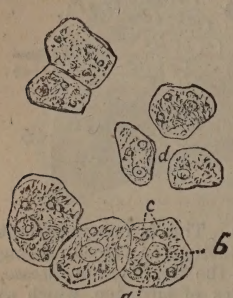
Longitudinal section of a small portal vein and canal. P, the portal vein; A D, the accompanying artery and duct; *a a*, portions of the canal from which the vein has been removed; *b*, orifices of ultimate twigs of the vein springing immediately from it.

blood is sometimes destroyed. Saccharine matter, or sugar, and the red corpuscles in healthy rich blood, are extensively formed in the liver, and pass into the circulation. When the exhausted blood enters the liver by the hepatic artery, or vein, it has no red corpuscles, but is charged with impurities drawn out of the various tissues, exhausted mucous, and lymphatics; here the blood is subject to a process through the electric power of the ganglionic or nutritive

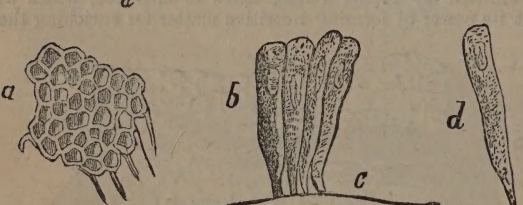
nerves, by which the impurities are formed into gall, and deposited in the gall-bladder, from where it is expelled, through the gall-duct, into the duodenum, where it mixes with the digested food and pancreatic juice, from the pancreas or sweetbread, and passes into the bowels, where it acts as a stimulant.—*From Dr. Budd "On the Diseases of the Liver."*

It is not in the liver only that the cells perform this office, for it seems established as a general law, that all true secretion, whether in animals or in plants, is effected by the agency of cells; that, "however complex the structure of the secreting organ, these nucleated cells are its really operative part." In each secreting organ, the secreting cells have a peculiar power to form, or to withdraw from the blood, the secretion proper to the part.

On examining these cells of the liver under the microscope, it is seen that most of them enclose small spheroidal globules, which are recognised, by their dark outline, or high refractive power, to be globules of oil or fat.



Nucleated cells of the liver; *a*, the nucleus; *b*, the nucleolus; *c*, fat-globules; *d*, cells of small size, detached.



Nucleated cells of the gall-bladder, as seen under a high power; *a*, pavement formed by the union and apposition of the cells; *b*, side view of four cells; *c*, the basement-membrane; *d*, a detached cell.

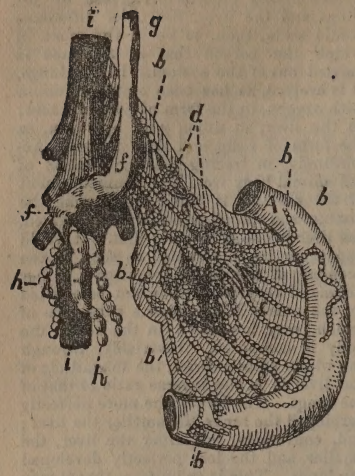
The blood which enters the liver by the hepatic artery fulfils three functions: it nourishes the liver; it supplies the excreting ducts with mucous; and, having performed these purposes, it becomes venous, enters the branches of the portal vein, and contributes to the secretion of the bile. The portal vein fulfils two functions: it conveys the blood from the artery, and the mixed blood to the coats of the excreting ducts. It has been called the vena arteriosa, because it ramifies like an artery, and conveys blood for secretion; but it is an arterial vein in another sense, being a vein to the hepatic artery, and an artery to the hepatic vein. The hepatic veins convey the blood from the lobular venous plexuses into the vena cava inferior.—*Hooper.*

In ordinary livers these oil or fat globules are small and few in number; but in the fatty condition of the liver so often found in persons dead of consumption, and in that induced by keeping animals exclusively on fatty substances, they are so large and numerous, as to distend the cells to double their natural size, and consequently to cause a great increase in the volume of the liver. The cells at the circumference of the lobule usually contain a larger amount of oil than the cells near its centre.

PANCREAS. (From the Greek,—all, and flesh; so called from its fleshy consistence.) A glandular viscus of the abdomen, of a long figure, compared to a dog's tongue, situated in the epigastric region under the stomach. The prolonged portion at the right extremity has been called *Pancreas Asellii*, after Caspar Aselli, the anatomist. It is composed of innumerable small glands, the excretory ducts of which unite and form one duct, called the pancreatic duct; which perforates the duodenum with the ductus communis choledochus, and conveys a fluid, in its nature similar to saliva, into the intestines. The pancreatic artery is a branch of the splenic. The veins evacuate themselves into the splenic vein. Its nerves are from the par vagum and great intercostal. The use of the pancreas is to secrete the pancreatic juice, which is to be mixed with the chyle in the duodenum. The quantity of the fluid secreted is uncertain; but it must be very considerable, if we compare it with the weight of the saliva, the pancreas being three times larger, and seated in a warmer place. It is expelled by the force of the circulating blood, and the pressure of the incumbent viscera in the full abdomen. Its great utility appears from its constancy, being found in almost all animals; nor is this refuted by the few experiments in which a part of it was cut from a robust animal without occasioning death, because the whole pancreas cannot be removed without the duodenum: for even a part of the lungs may be cut out without producing death, but they are not therefore useless. It seems principally to dilute the viscid cystic bile, to mitigate its acrimony, and to mix it with the food. Hence it is poured into a place remote from the duct from the liver, as often as there is no gall-bladder. Like the rest of the intestinal humours, it dilutes and resolves the mass of aliments, and performs every other office of the saliva.—*Hooper.*

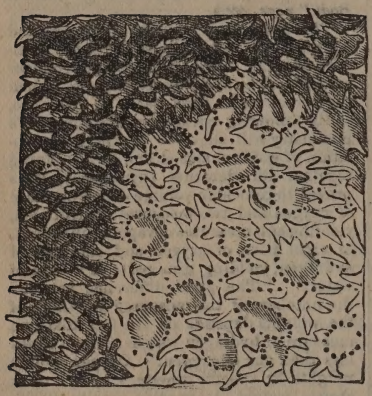
Dr. Smith says, all aliment, but more especially vegetable food, contains a large portion of carbon, more it would appear than the lungs can evolve. The excess is secreted from the blood by the liver, in the form of resin, colouring matter, fatty matter, mucus, and the principal constituents of the bile. All these substances contain a large proportion of carbon. After accomplishing certain secondary purposes in the process of digestion, these biliary matters, loaded with carbon, are carried out of the system, together with the non-nutrient portion of the aliment. In the decarbonizing process performed by the lungs and the liver, the chief difference would seem, then, to be in the mode in which the carbon that is separated is carried out of the system. In the lungs, it is evolved, as has been stated, in union with oxygen, in the form of carbonic acid; in the liver, in union with hydrogen, in the form of rosin and fatty matter. Accordingly, in tracing the organization of the animal body from the commencement of the scale, it is found that among the distinct and special organs that are formed, the liver is one of the very first. It would appear to be constructed as soon as the economy of the animal requires a higher degree of respiration than can be effected by the nearly homogeneous substance of which, very low down in the scale, the body is composed. Invariably, through the whole animal series, the magnitude of the liver is in the inverse ratio to that of the lungs. The larger, the more perfectly developed the lungs, the smaller the liver; and, conversely, the larger the liver, the smaller and the less perfectly developed the lungs. This is so uniform that it may be considered as a law of the animal economy. (*See "Composition of Human Body," page* 42.)

The numbers of pounds of oxygen and hydrogen gas in comparison with the numbers of cubic feet, owing to the condensation which these gases undergo when they combine to form water, is immense, as the following extracts from Stockhardt's chemistry will show:—"By the decomposition of water analysed, and by combining together its elements (synthesis), it is proved to consist in volume of one measure of oxygen and two measures of hydrogen, yielding two measures of vapour; in weight, of eight parts of oxygen and one part of hydrogen, yielding nine parts in weight of water." "The great difference between the numbers of the measured and those of the weights depends on the fact that one measure of hydrogen weighs sixteen times less than one of oxygen." Oxygen atomic weights, 8; specific gravity, 1·1; hydrogen atomic weight, 1; specific gravity, 0·068. Hydrogen is the highest of all gases, 14½ measure only weight, as much as 1 of air. "From one measure of water when decomposed into its elements several thousand measures of these two gases may be obtained." The coincidence of the numbers of lbs. of oxygen (111), and water (111), appears to need explanation, 12½ hydrogen, 98½ oxygen combine to form 111 water, the surplus oxygen and hydrogen are contained in the fat, gelatine, and oxides.



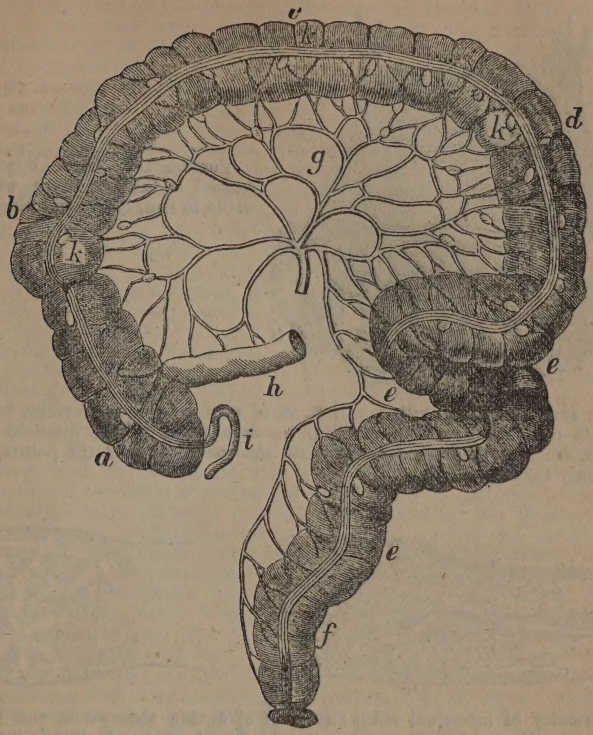
A portion of small bowel attached to the mesentery, showing the lacteals proceeding through the mesentery to convey the nutriment from the bowels to the thoracic duct. The dotted appearance of the lacteals shows the glandular structure, and in these glands the chyle or nutriment undergoes an important change before it reaches the thoracic duct.

A A, a portion of the small intestines (jejunum); *b b b b*, lacteal vessels; *c c c*, the mesentery; *d d*, mesenteric glands; *f f*, the receptacle of the chyle; *g*, thoracic duct; *h h*, lymphatic vessels from other parts of the body; *i*, the aorta.

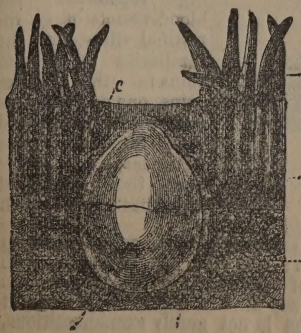


Part of a patch of Peyer's glands from the inside of the small bowel, showing also the intestinal villus, or absorbents which take up the nutriment out of the digested matter or chyme in the bowel, and convey it to the thoracic duct.

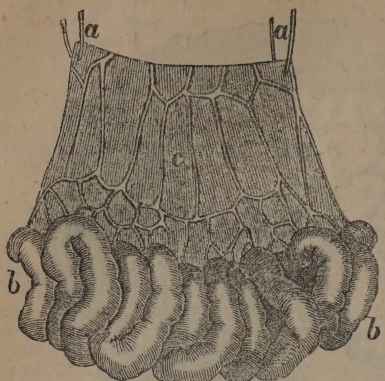
One of the solitary glands in the bowel; all these glands either take up matter and change its character, or they give out matter to aid in the processes of assimilation.



The colon, or large bowel, showing the mesenteric arteries which supply it with blood; *a*, *b*, *c*, *d*, *e*, the colon, showing the sacculated form and general arrangement; *f*, the rectum; *h*, the small intestine, terminating in the colon, and forming the cœcal valve; *g*, the mesenteric arteries.

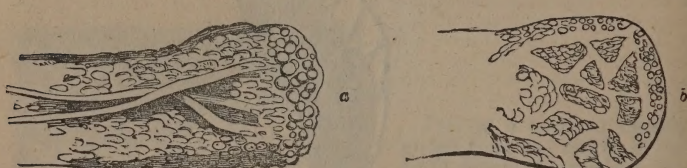


Side view of a portion of intestinal mucous membrane imbedded in the submucous tissue. The small points project inside the bowel, and take up the nutriment.

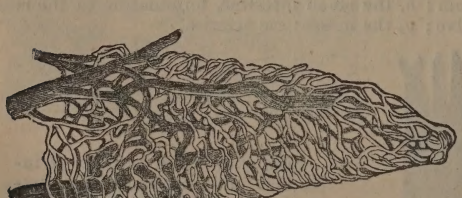


Portion of small bowel attached to the mesentery, with the veins to supply arterial blood.

The small intestinal villus, which, as is seen by the engravings, page 390, projects into the bowel to take up nutriment out of the digested food or chyme, are curiously constructed with absorbent cells at the points, so that they only take up fluid.



Extremity of intestinal villus; seen at *a*, during absorption, and showing absorbent cells and lacteal trunks, distended with chyle; *b*, during interval of digestion, showing the supposed peripheral network of lacteals.



The annexed engraving represents the blood-vessels of an intestinal villus, with the capillaries or minute veins: the larger veins, one carrying nutritive or arterial blood into the mass, the other large vein carrying the exhausted blood back for renewal.

The following is from Dr. Carpenter:—"The duodenum receives not only the pancreatic, but also the *biliary* secretion; and from the constancy with which this fluid is poured into the upper part of the intestinal tube, or even into the stomach itself, in all animals which have any kind of hepatic apparatus, it seems a legitimate inference that this secretion is not purely excrementitious,

but serves some important purpose in the digestive process. It is not easy, however, to state with precision what this purpose is. The results of many of the experiments which have been made to determine it, are vitiated by the fact, that the pancreatic duct in most cases discharges itself into the intestinal tube at the same point with the hepatic, and has thus been frequently involved in operations performed upon it.—As the most important constituents of Bile, and the agency of the Liver as an assimilating and depurating organ, will be more appropriately considered elsewhere (CHAPS. IV. and IX.), we shall here limit ourselves to the consideration of what may be regarded as the best-established facts in regard to the uses of the biliary secretion in the digestive process.

"When its action is tested out of the body, by mingling it with the different constituents of food, it is found to exert no change upon starchy substances whilst fresh; though, when in a state of incipient decomposition, it acts upon them as other animal substances do. It has no action upon cane-sugar, until it has stood a considerable length of time; but then it converts it into lactic acid. This change it speedily exerts, as do nearly all other animal substances, upon grape-sugar. It has no action on albuminous substances even when acidulated. And although it will form an emulsion with oleaginous matter, yet the emulsification is less complete than that which is effected by the pancreatic fluid alone.* Hence it appears to be deficient in anything at all similar to the peculiar ferments of the saliva, gastric juice, and pancreatic secretion; and its office in digestion must be of a different character from that of either of those fluids. The nature of this office may be partly judged of from what takes place when fresh bile is mingled with the product of gastric digestion. The acid re-action of the latter is neutralized by the alkali of the former, and a sort of precipitation takes place (as was originally noticed by Dr. Beaumont), in which certain constituents of the bile fall down, and in which also (according to M. Bernard) the albuminous matters that have been dissolved, though not yet absorbed, are for a time rendered insoluble, leaving the saccharine matters in solution, and the oleaginous floating on the top. The admixture of the bile with the chyme seems further to have the effect of checking destructive chemical changes in its composition. For M. Bernard found that when two similar pieces of meat had been immersed for three months, one in a bottle of gastric juice alone, and the other in a mixture of gastric juice and bile, a strong ammoniacal odour, resulting from decomposition, was emitted from the former, whilst the latter was pure and free from any smell whatever. And it was remarked by MM. Tiedemann and Gmelin (and also recently by Hoffmann), that when the bile was prevented from passing into the alimentary canal, the contents of the latter were more fœtid than usual. Moreover, it is found that the admixture of bile with fermenting substances checks the process of fermentation; and M. Bernard has shown by ingeniously-contrived experiments,† that this antagonistic power is exerted also in the living body. Hence we can understand how the reflux of bile into the stomach should seriously interfere with the process of gastric digestion; and how, when there is a deficient secretion of bile, or more food is swallowed than the bile provided for it can act upon, or the character of the biliary secretion itself has undergone any serious perversion, there should be much more than the normal amount of putrefactive fermentation, as is indicated by an evolution of flatus, and very frequently by diarrhœa. Further, the want of proper neutralization of the gastric fluid will cause the continuance of acidity in the contents of the intestinal canal, which in its turn induces a state of irritation of its mucous membrane, and a perversion of its secretions: and it is one of the beneficial results of 'alterative' medicines, employed to remedy this condition, that, by augmenting the secretion of bile, they tend to reproduce a state of neutrality in the contents of the alimentary canal. Moreover the

* Dr. Bence Jones, in the *Medical Times*, July 5, 1851

† "Amer. Journ. of Med. Sci.," Oct., p. 351.

presence of a proper quantity of bile in the intestine seems to promote the secreting action of the intestinal glandulæ, and also to contribute to maintain the peristaltic movement of the walls of the canal; this appears alike from the tendency to constipation, which is usually consequent upon deficiency of the secretion, and from the diarrhœa which proceeds from its excess; and is confirmed by the purgative properties which inspissated ox-gall has been found to possess.

"Notwithstanding all its uses, however, it must be admitted that the prevention of the discharge of bile into the alimentary canal is not attended with the deleterious results which might have been anticipated from it; for it has been found by the experiments of Schwann, Blondlot, and Bernard, that if the bile-duct be divided, and a tube be inserted in it in such a manner as to convey away the secretion through a fistulous orifice in the abdominal parietes, the animals thus treated may live for weeks, months, or even years, although they usually die at last with signs of inanition. Of the quantity of bile daily poured into the alimentary canal of man, we have no other mode of forming an estimate, than by observing the quantity poured out from the bile-ducts of animals in such experiments as those just cited. Blondlot found that a dog in which he had established a fistulous opening for the discharge of the bile, secreted from 40 to 50 grammes in the twenty-four hours; whence he inferred that an adult man secretes about 200 grammes, or 7 oz. On the other hand, it is estimated by Bidder and Schmidt, from the results of their experiments on various animals, that the daily amount of bile secreted by man is not less than 56 oz. (avoird.); of which about 5 per cent. is solid matter. It appears from the carefully-conducted observations of these laborious investigators, that the rate of secretion is by no means uniform, but that it bears a certain relation to the digestive process; the quantity poured forth in a given time being greatest about ten or twelve hours after a full meal, and then diminishing until it reaches its minimum, for which about as many more hours are required. Thus a cat, two hours after a full meal of flesh, secreted at the rate of 7·5 grains of bile per hour; at the fourth hour, 9·7 grains; at the sixth hour, 11·6 grains; at the eighth hour, 12·7 grains; and at the tenth hour, thirteen grains. From the tenth to the twenty-fourth hour, the secretion diminished at the rate of 4-10ths of a grain per hour; until it reached the lowest of the above amounts. The secretion diminishes considerably when food is withheld for some time; the quantity poured out after ten days' starvation being only about one-eighth of what it is when at its maximum. Still it is obvious, that although its rate is thus greatly influenced by the stage of the digestive process (which is the less to be wondered at, when it is remembered that the secretion is formed from blood that is charged with newly absorbed and imperfectly-assimilated matters), the excrementitious character of the secretion requires that its elimination shall be constantly going on to a certain degree; but a receptacle is provided in man, as in most others among the higher animals whose digestion is performed at intervals, for the storing up of the fluid until it can be usefully employed in that process. The intestinal orifice of the ductus choledochus is closed by a sort of sphincter; and the fluid secreted during the intervals of digestion, not being propelled with a force sufficient to dilate this, flows back into the gall-bladder, which dilates to receive it. The presence of food in the duodenum seems to excite the walls of the gall-bladder and of the biliary ducts (which contain a large quantity of non-striated muscular fibre), to a contraction sufficiently powerful to propel their contents into the intestine, in spite of the opposition of the sphincter; but whether this takes place through a reflex action of the nervous system, or through the direct stimulation of the muscular coat of the duct by the passage of alimentary matters over its orifice, we have at present no means of satisfactorily determining. It will be recollected that the gall-bladder is usually found distended with bile, in cases of death from starvation (§ 71), notwithstanding the diminution in the amount actually secreted. Of the

bile which is poured into the intestinal tube, by far the greater proportion seems to be re-absorbed (§ 117).

"Besides the biliary and pancreatic secretions, there is poured into the upper part of the intestinal canal a fluid secreted in its own walls, which has received the designation of *Succus Entericus*. It seems not improbable that the secretion of this fluid may be the function of the glands of Brunner, which are small racemose clusters of follicles (Fig. 17), imbedded in the walls of the duodenum, extending also to the commencement of the jejunum. The intestinal juice appears, from the researches of Bidder and Schmidt, to be a colourless viscid liquid, invariably alkaline in its reaction, and containing from 3 to 3½ per cent. of solid matter. The total amount daily secreted in man is estimated by these experimenters at about 7 oz.; the rate of its secretion seems to be most rapid five or six hours after a meal; and its quantity is considerably increased shortly after the ingestion of fluid, and this without any diminution in the proportion of its solid constituents. The properties of this secretion are extremely remarkable: for, according to the results obtained by Bidder and Schmidt and their pupil Zander (which are now admitted by Lehmann), it exerts a solvent action on albuminous bodies scarcely inferior to that of the gastric juice, and a power of converting starch into sugar which is scarcely less than that of saliva or pancreatic fluid.

Portion of one of *Brunner's Glands*, from the Human Duodenum.

"The fluid of the small intestines, which is compounded by the intermixture of the biliary and pancreatic secretions with the salivary and gastric fluids, and with the secretion of the intestinal glandulæ, appears to possess the very peculiar power of dissolving, or of reducing to an absorbable condition, alimentary substances of every class; thus possessing more of the character of a 'universal solvent,' than either of these secretions has in its separate state. It completes the conversion of starchy into saccharine matter; and thus enables the former to supply the blood with an important pabulum for the combustive process, which is at once absorbed into the blood vessels. It emulsifies the oleaginous matter, and thus renders it capable of being introduced into the lacteals. And it not only restores to the state of solution those albuminous compounds which may have been precipitated by the addition of bile to the product of gastric digestion, but it also exerts a powerful solvent influence upon albuminous substances which have not been submitted to the previous agency of the gastric fluid (as has been shown by experimentally introducing pieces of meat, through a fistulous orifice, directly into the duodenum), and it thus completes the solvent process which had been very far from perfected in the stomach. What is the precise share, however, of each of these secretions, in producing this composite result, cannot be stated with any degree of certainty. It is obvious that the amount of each kind of alimentary substance that can be thus prepared for absorption in a given time, will vary with the amount of the secretion, by whose agency this preparation is specially affected; and as there are many indications that the quantity of each that is taken up in absorption is limited, and that it bears a relation to the wants of the system, it is probable that the amount of the solvent or reducing fluid secreted by each glandular apparatus, is regulated (as we have seen it to be in the

case of the gastric juice, § 100) by the demand set up by the nutrient operations, rather than by the amount of alimentary matter that is waiting to be digested. The processes of digestion and conversion are probably continued during the entire transit of the alimentary matter along the small intestine, and at the same time the products of that conversion are gradually being withdrawn by absorbent action; so that, by the time it reaches the cæcum, the undigested residue contains little else than the innutritious or insoluble components of the food, together with the excrementitious portion of the bile and of other secretions. Up to this time, the contents of the canal have an alkaline reaction; but in the cæcum they again become acid; and it has been supposed that this change depends upon the secretion of a fluid, analogous to the gastric juice, by the large and numerous tubular glands contained in the parietes of this part, whereby the albuminous matters still undigested might be more completely dissolved. This supposition appeared to derive weight from the fact that the cæcum is peculiarly large in most herbivorous animals, the 'appendix vermiformis' being also of greatly increased dimensions, and sometimes double. But from the experiments and observations of Blondlot, it seems probable that the acid of the cæcum is rather a product of the transformation of saccharine substances in the alimentary canal, than a secretion from its walls.* Still, as this lactic acid has a solvent power for albuminous matters, which is equal, or nearly so, to that exerted by hydrochloric acid, it is by no means impossible that it may be subservient to the completion of the digestive process in the cases in question; since, the larger the proportion of the aliment composed of saccharine matters, the greater will be the importance of a thorough extraction of its albuminous constituents.

"The intestinal tube is furnished, throughout its entire length, with innumerable simple open glandulæ, the 'follicles of Lieberkühn;' these are straight narrow cæca, standing side by side, with very little intervening substance (except where the Peyerian bodies lie amongst them), and corresponding in length with the thickness of the mucous membrane. Their orifices are seen in the interspaces between the villi, where they are so closely set together as to seem like the apertures of a sieve; and they are arranged in rings around the Peyerian glandulæ (Fig. 20). The precise nature of their secretion is unknown; and it seems not improbable that notwithstanding the close resemblance which they bear to one another in anatomical characters, there may be some variety of function among them. Thus it is likely that some of them (like the mucous glandulæ of the stomach) are everywhere destined to supply a protective mucus; whilst some of those in the higher part of the intestinal tube may furnish the succus entericus; and some of those in the lower may be concerned in the elimination of that peculiarly fæcal matter, which seems to be rather an excretion from the blood, than the result of the decomposition of any constituents of the food (§ 118).

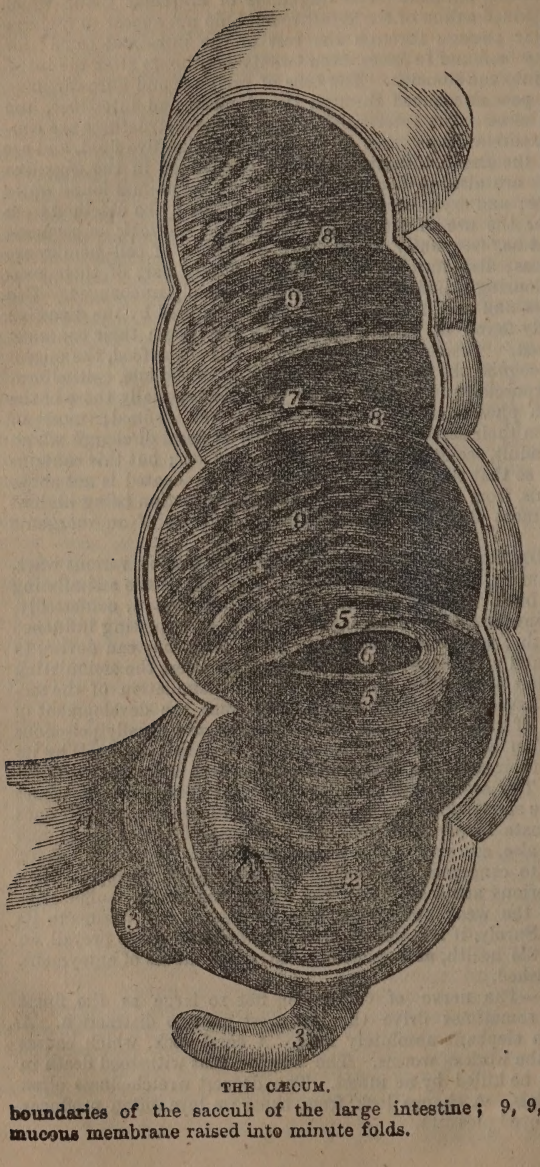
"The undigested residue of the food, mingled with the products of secretion that have been poured into the alimentary canal, gradually acquires, in the large intestine, the ordinary consistency of fæces, through the continuance of the absorbent process, whereby the superfluous fluid is removed. The condition of this residue has been particularly studied by Dr. Rawitz, who examined microscopically the products of the artificial digestion of different kinds of aliment, and the contents of the fæces of different animals that had eaten the same articles. 'The general results of his examinations, as regards *animal* food, show that the muscular tissue breaks up into its constituent fasciculi, and that these again are divided transversely; gradually the transverse striæ become indistinct, and then disappear; and, finally, the sarcolemma seems to be dissolved, and no trace of the tissue can be found in the chyme, except a few fragments of fibres. These changes ensue most rapidly in the flesh of fish and hares, less rapidly in

* See his "Traité Analytique de la Digestion," p. 103.

that of poultry and other animals. The fragments of muscular tissue which remain after the continued action of the digestive fluid, do not appear to undergo any alteration in their passage through the rest of the intestinal canal; for similar fragments may be found in fæces, even twenty-four hours after the introduction of the meat into the stomach. The cells of cartilage and fibro-cartilage, except those of fish, pass unchanged through the stomach and intestines, and may be found in the fæces. The interstitial tissues of these structures are converted into pulpy, textureless substances in the artificial digestive fluid, and are not discoverable in the fæces. Elastic fibres are unchanged in the digestive fluid. Fatty matters are also unchanged: fat cells are sometimes found quite unaltered in the fæces; and crystals of cholesterin may usually be obtained from fæces, especially after the use of fat pork. As regards *vegetable* substances, Dr. Rawitz states that he 'frequently found large quantities of cell-membranes unchanged in the fæces; also starch-cells, deprived of only part of their contents. The green colouring principle, chlorophyll, was usually unchanged. The walls of the sap-vessels and spiral-vessels were quite unaltered by the digestive fluid, and were usually found in large quantities in the fæces; their contents, probably, were removed.' Besides the undigested residue of the food, the microscope enables us to recognise the brown colouring matter of the bile, epithelium-cells, and mucous corpuscles, and various saline particles, especially those of the ammoniaco-magnesian phosphate, whose crystals are well defined; most of which are derived from their secretions. The quantity of fæcal discharge which is daily passed by an adult, seems to average from 4 to 6 oz.; but this contains 75 per cent of water; so that the dry solid matter thus evacuated is not above 1 oz. or 1½ oz. Of this, from 23 to 31½ per cent. (the proportion being highest when an abundant meat diet has been consumed) consists of an inorganic ash."

A POISON: BY DR. PROUT.—There is an article much used in various ways, though not as an aliment, the deleterious effects of which on the assimilating organs require to be briefly noticed—namely, tobacco. Although, confessedly, one of the most virulent poisons in nature, yet such is the fascinating influence of this noxious weed, that mankind resort to it in every mode they can devise, to insure its stupefying and pernicious agency. Tobacco disorders the assimilating functions in general, but particularly, as I believe, the assimilation of the saccharine principle. I have never, indeed, been able to trace the development of oxalic acid to the use of tobacco, but that some analogous and equally poisonous principle (probably of an acid nature) is generated in certain individuals by its abuse is evident from their cachectic looks, and from the dark and often greenish-yellow tint of blood. The severe and peculiar dyspeptic symptoms sometimes produced by inveterate snuff-taking are well known: and I have more than once seen such cases terminate fatally with malignant disease of the stomach and liver. Great smokers also, especially those who employ short pipes and cigars, are said to be liable to cancerous affection of the lips. But it happens with tobacco, as with deleterious articles of diet, the strong and healthy suffer comparatively little, while the weak and predisposed to disease fall victims to its poisonous operation. Surely, if the dictates of reason were allowed to prevail, an article so injurious to the health, and so offensive in all its modes of enjoyment, would speedily be banished.

SMALL MATTERS.—The nerve of the tooth, not so large as the finest lambric needle, will sometimes drive the strongest man to distraction. A mosquito can make an elephant absolutely mad. A coral rock, which causes a navy to founder, is the work of worms. The warrior that withstood death in a thousand forms may be killed by an insect. The deepest wretchedness often results from petty trials. A chance look from those we love often produces exquisite pain or unalloyed pleasure.



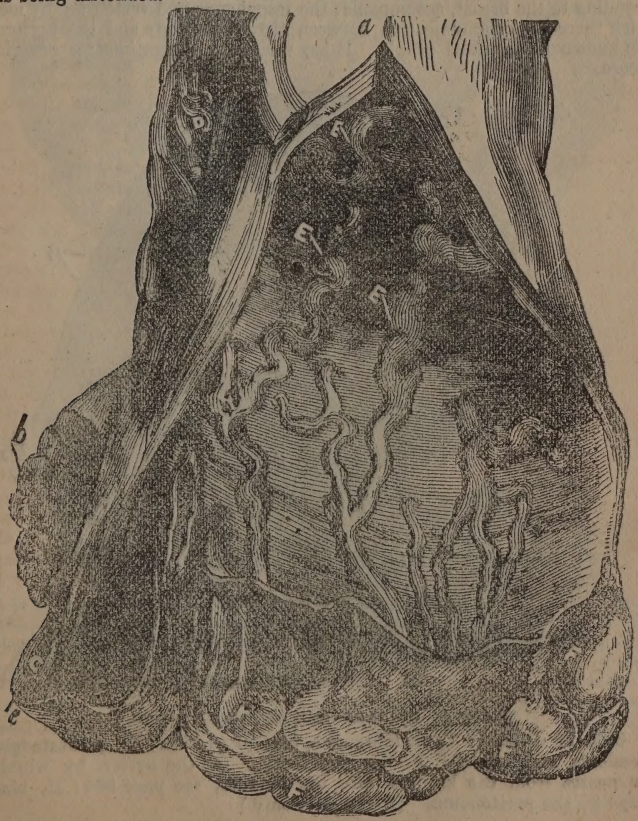
THE CÆCUM.

The cæcum is the commencement of the colon, or large gut, and rises from the lower part of the right side of the bowels. Smith says it has a digestive office; others think some change in the matter which has passed the bowels takes place; but nothing certain is known. Hard substances, such as buttons or fruit stones, which have passed the bowels, lodge here sometimes, and cause mischief. Sometimes it is inflated with wind, and has led to supposition of tumour, causing unfounded alarm. The muscular bands of the colon are well developed.

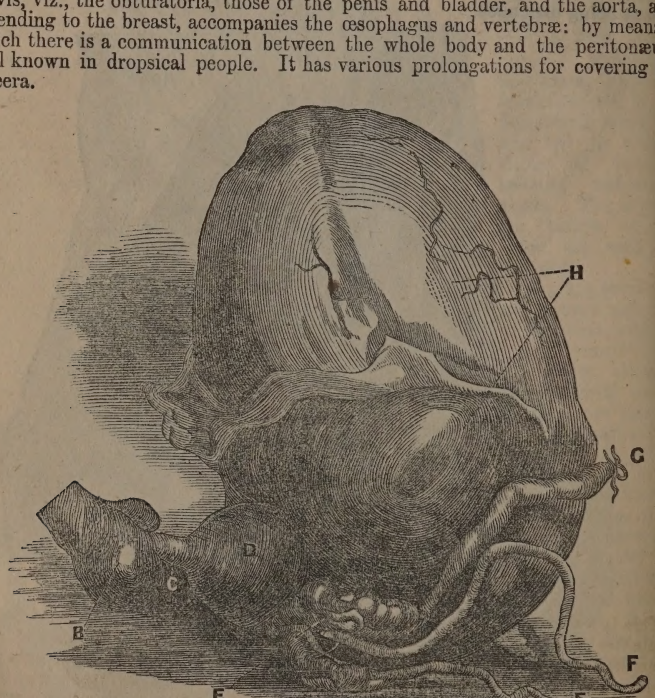
Fig. 2, a section of the cæcum and part of the colon, with the lower termination of the ileum, showing the ileocæval valve; 1, the ileum near to its termination; 2, the cul-de-sac of the cæcum; 3, 3, the appendix vermiformis; 4, the entrance of the appendix vermiformis; 5, 5, the two semilunar segments forming the ileocæcal valve; 6, the opening of the ileum into the cæcum; 7, the colon; 8, 8, valvular projections of the mucous membrane, forming the boundaries of the sacculi of the large intestine; 9, 9, the surface of the mucous membrane raised into minute folds.

DISEASES OF THE RECTUM (*the last part of the bowel*), PILES, &c.—The following four engravings are from "Quain's Diseases of the Rectum;" the illustrations in the work are finely coloured, and of course give a more correct idea of the blood-vessels. I have inserted these the full size, for the purpose of showing the nature and cause of piles, a complaint so very common from drinking ardent spirits and other alcoholic beverages, from sedentary habits with the abstemious, and the want of cold-water application in the form of sitz baths. The blood veins are shown gorged and enlarged from want of muscular power in the vein to propel the blood, causing distension, and eventually permanent enlargement and abscess.

ENGRAVING IV.—The bowel being partly laid open and stripped of the mucous membrane, enlarged and tortuous veins are shown, terminating in the hæmorrhoids (piles), which are seen to hang below the sphincter; *a*, the cut edge of the bowel at the upper end of the division; *b*, the sphincter; *c*, hæmorrhoids, where cut through; *d*, the veins outside the gut; *e*, the veins within, seen to be large and tortuous: *f*, piles formed by the congested blood-vessels being distended.



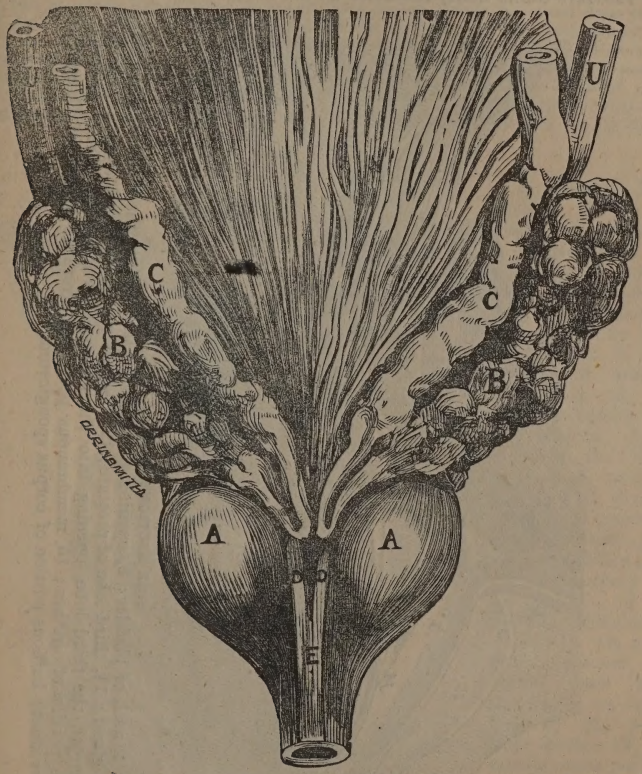
PÉRITONÆUM.—(From the Greek, *I extend round.*) A strong simple mem brane, by which all the viscera of the abdomen are surrounded. It has a exceedingly smooth, exhaling, and moist internal surface. Outwardly it everywhere surrounded by cellular substance, which, towards the kidneys, very loose and very fat, but is very short at the lower tendon of the transvers muscles. It begins from the diaphragm, which it completely lines; and at th last fleshy fibres of the ribs, and the external lumbar fibres, it completes th septum, in conjunction with the pleura, with which it is continuous through th various intervals of the diaphragm. Posteriorly, it descends before the kidneys anteriorly, behind the abdominal muscles. It dips into the pelvis from th bones of the pubes, passes over the bladder, and descends behind; and bein again carried backwards at the entrance of the ureters, in two lunar folds, i rejoins upon the intestinum rectum that part of itself which invests the loins and in this situation lies before the rectum. The cellular texture, which cover the peritonæum on the outside, is continued into sheaths in very many places of which, one receives the testicle on each side, another the iliac vessels of th pelvis, viz., the obturatoria, those of the penis and bladder, and the aorta, and ascending to the breast, accompanies the œsophagus and vertebræ: by means o which there is a communication between the whole body and the peritonæum well known in dropsical people. It has various prolongations for covering th viscera.



BLADDER, URINARY AND SEMINAL VESSELS.

B, bulb of urethra; C, membranous part of urethra; D, prostate gland; E, vesicula seminales; F F, vasa deferentia; G, the ureter, by which the urine passes from the kidneys into the bladder, see page 364; H, bladder covered by the peritoneum. (Bell's Anatomy.)

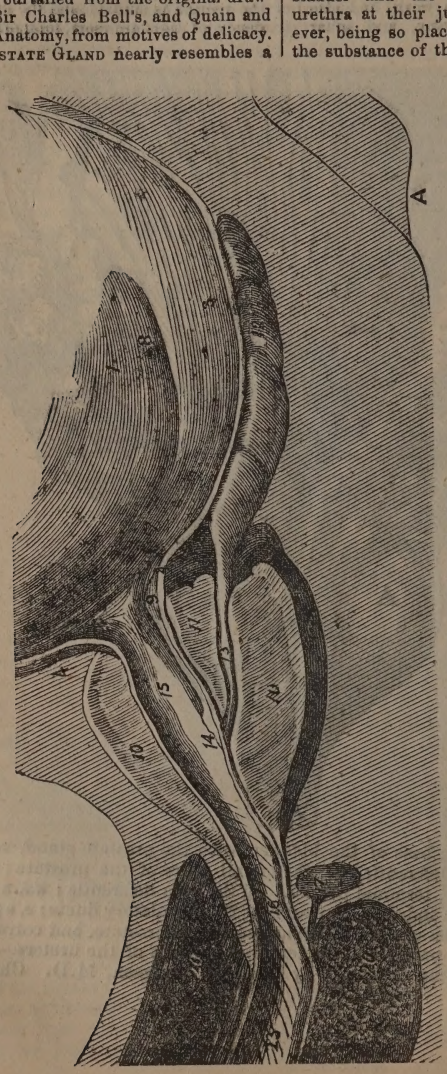
STRICTURE AND DISEASE OF THE URETHRA AND PROSTATE GLAND, often termed the old man's disease, is too important a subject to be omitted, although from the nature and causes of it, and the anatomy of the parts, it can only be briefly discussed in this work. Hodgson's work and also Sir Charles Bell's Anatomy, and other works, give very interesting and necessary information for the prevention of these formidable, dangerous, and painful diseases. The benefit of the habitual use of the sitz bath will be obvious, when the complicated structure of the parts near the termination of the rectum is studied, and the injurious tendency of tight trowsers, long sitting on



This is a view of the base of the bladder, with the prostate gland, vesiculæ seminales, and vasa deferentia. *aa*, the lateral lobes of the prostate; *bb*, the vesiculæ seminales; *cc*, terminal portions of the vasa deferentia; *dd*, a pair of shallow grooves, which indicate the course of the ejaculatory ducts; *e*, a groove, which is sometimes seen on the under surface of the prostate, and corresponds to the urethra at that part; *u u*, the terminal portions of the ureters.—(From "Disease of the Prostate Gland," by Decimus Hodgson, M.D. Churchill, London.)

soft heating cushions, and the use of alcoholic drinks, all which tend to excite and weaken the organs, as well as produce piles. The use of tobacco is also a very common cause of paralysis of these parts. The cuts are much curtailed from the original drawings in Sir Charles Bell's, and Quain and Wilson's Anatomy, from motives of delicacy.

THE PROSTATE GLAND nearly resembles a chestnut. It usually measures a little more than an inch from side to side, an inch from before backwarks, and half an inch in thickness. Situated deeply in the pelvis, it will be found to enclose part of the neck of the bladder and the commencement of the urethra at their junction; the tube, however, being so placed as that two-thirds of the substance of the gland lie beneath it.

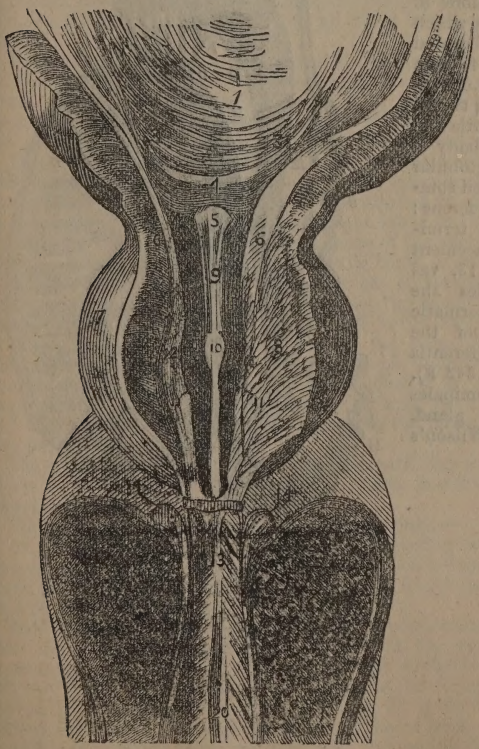


SIDE SECTIONAL CUT.

1, interior of bladder; 4, neck of bladder; 8, opening of one of the ureters into the bladder; 9, uvula vesica; 10, 10, prostate gland; 11, third lobe of prostate; 12, vesicula seminales of left side; 13, ejaculatory duct, passing beneath the third lobe, opening into the prostate portion of urethra; 14, verumontanum; 15, prostate portion of urethra; 16, membranous portion of urethra; 17, one of Cowper's glands, with its excretory duct; bulbous portion of corpus spongiosum.

The prostate is also traversed by the common seminal ducts, which pass from behind forward through its substance, and open into the urethra; it also lays immediately beneath the anterior ligaments of the bladder, and rests on the middle portion of the rectum, to which it is united by means of dense cellular membrane.

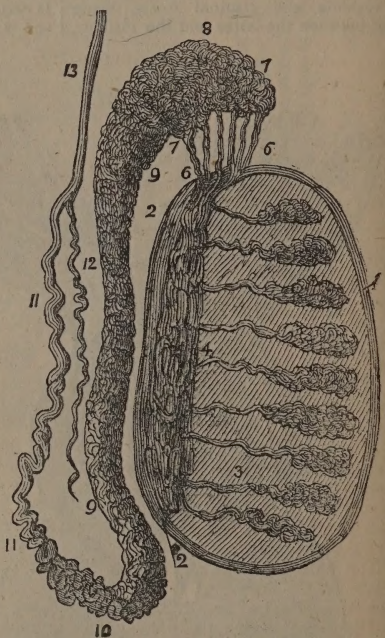
The prostate gland consists of three lobes, two of which placed laterally are of equal size; the third (a small rounded body) is connected intimately with the others lying behind and between them. The third lobe is exposed by turning down the vesicula and seminal ducts, being placed between the latter and the bladder, and corresponds to the elevation described as the *luette vésicale*. If enlarged, the third lobe forms a projection into the neck of the bladder, which would afford impediment to the evacuation of urine, or the introduction of an instrument. The tissue of the gland is resistant, of a greyish colour, and consists of a series of follicles aggregated together. These secrete a whitish ropy mucus, which is poured from ten or twelve orifices into the urethra, each side of the verumontanum. It is probable that this mucus serves to sheathe the passages and preserve them from the acrid urine. It certainly unites also to the seminal fluid, and is discharged with it by the urethra.



1, bladder; 2, 2, divided coats of bladder turned aside; 3, 3, openings of termination of ureters into the bladder; 4, triangular smooth surface inside base of bladder; 5, projection of mucous membrane at the commencement of the urethra; 6, 6, neck of the bladder; 7, 7, prostate gland; 8, 8, divided surface of prostate; 9, 9, prostatic portion of urethra; 10, verumontanum; 11, 11, opening of the seminal ejaculatory ducts; 12, 12, prostatic sinuses in which are seen the numerous openings of the prostatic ducts; 13, 13, membranous portion of urethra; 14, 14, Cowper's glands, 16, 16, bulb of urethra divided by a longitudinal incision; 20, bulbous portion of urethra. (From "Quain and Wilson's Anatomy.")

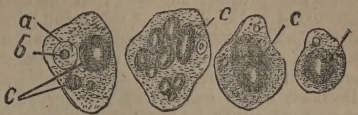
The testes are suspended at unequal heights, that of the right side being higher than the opposite: this disposition prevents the inconvenience or injury that might result from one being pressed against the other in certain positions of the thighs. They are two soft, pulpy, dark-yellow bodies, divided into lobes, and found to consist of vast numbers of minute tubes; in these tubes the seminal fluid is formed. According to Monro, their number is about 300, and the length of each 16 feet, making a total of 4,800 feet, and 1-200th of an inch diameter. The fluid is then transmitted from the vasa efferentia by the vasa deferentia through the spermatic cord over the lower part of the bladder to the vesicula seminales, which are two narrow membranous sacs, placed along the base of the bladder, and extend obliquely from the uterus to the base of the prostate gland; piercing which, they open into the urethra. The passages, however, from the vasa deferentia and the vesicula seminales continue separate and distinct into the urethra.

SECRETING AND EXCRETING STRUCTURE OF TESTES.



3, 3, lobules of testes composed of the convolutions of the tubuli seminiferi, by which the seminal fluid is elaborated out of the blood; 4, 4, vasa recta; 5,5, reste testis; 6,6, vasa efferentia; 7,7, cases of tubuli formed by vasa efferentia; 8, mass of tubuli; 9, 9, body of the epididymis; 10, globular minor; 11,11, convulated commencement of vas deferens; 12, vasculum aberrans terminating in the commencement of the vas deferens; 13, vas deferens, which carries the seminal fluid by the spermatic cord round the base of the bladder into the vasa deferentia (as shown in cut, page 342 F), and by the vesicula seminales (E) into the prostate gland. (From "Quain and Wilson's Anatomy.")

The mass of the liver is, as we have seen, made up of a plexus of capillary blood-vessels, the meshes of which are filled with nucleated cells containing the peculiar principles of the biliary secretion.



Nucleated cells, from a liver in a state of fatty degeneration: *a*, nucleus; *b*, nucleolus; *c c c c*, fatty globules.—*Bowman.*

The liver in spirit-drinkers is often rendered hard, and tough, and granular, by the contraction and induration of coagulable lymph, deposited, in consequence of inflammation, in the areolar tissue in the portal canals.

When the stomach and duodenum are empty, part only of the bile flows along the common duct into the duodenum; the remainder passes down the cystic duct into the gall-bladder.

During digestion, on the contrary, the gall-bladder contracts, and part of the bile accumulated in it, together with all which is brought by the hepatic duct, is poured into the duodenum.

Very extensive structural changes in the liver—in the fatty liver, the gin-drinker's liver, the scrofulous liver—may exist without jaundice; and that in those cases in which jaundice results from permanent closure of the common duct, the jaundice sometimes lessens after the lapse of many months, and when the secreting cells of the liver are almost entirely destroyed.

The sugar passing out of the liver by the veins and lymphatics at once enters the general current of blood, and is rapidly transformed. In a healthy animal, the quantity that enters the blood in the intervals of digestion is all transformed in the lung, so that not a trace of it can be found in the arterial blood. During digestion, when its quantity increases, some of the sugar may escape transformation in the lung, and be sent in the arterial blood to every part of the body: but it is not then found in the urine or other secretions, and must therefore be transformed in the blood. It is only when the secretion is so increased as to constitute disease that the sugar passes off in the urine, and the *diabetic* state is produced. What precise transformation the sugar undergoes in the blood is still uncertain. From some experiments made to determine this point, Bernard concludes that its transformation is not effected by the immediate influence of oxygen—that the sugar is not *burnt* in the lung, and exhaled as carbonic acid—and that it must undergo transformation by the lactic or some other fermentative process.

The most remarkable results which Bernard has arrived at are those which relate to the influence of the nervous system in controlling and modifying the secretion of sugar.

The principal of these results are the following:—

1st. That division of the pneumogastric nerves in the neck arrests the formation of sugar. If this operation be performed on a dog, and the animal be killed three days after, not a trace of sugar can be found in the blood of the hepatic vein or in the substance of the liver itself.

2nd. A second result which, on its first announcement, was very startling, is, that in all animals in which he could perform the experiment (dogs, rabbits, guinea-pigs), lacerating the floor of the fourth ventricle of the brain between the auditory nerves and the par vagum increases the formation of sugar to such a degree that a large quantity of sugar passes off in the urine, and the creature is rendered diabetic. The diabetic state continues some days, until the injury is repaired, after which sugar can no longer be found in the urine. Bernard states that the experiment which led to this singular result was suggested by his having noticed, in making experiments with another purpose, that pricking the pons

varioli at the origin of the fifth nerve caused an abundant secretion of tears and saliva. He further found that irritation of the floor of the fourth ventricle of the brain increases the secretion of sugar in the liver when the par vagum has been divided in the neck; showing that the nervous influence exciting the secretion is transmitted to the liver, not down the pneumogastric nerves, but down the spinal marrow. This last conclusion was confirmed by another result, that division of the spinal marrow below the brachial enlargement puts a stop in all cases to the production of sugar.

Bernard hence infers that the nervous influence that ordinarily excites the secretion of sugar is a *reflex* influence—that it passes up the pneumogastric nerves to the nervous centre (medulla oblongata or brain), and thence down the spinal marrow, and along the spinal nerves and the branches of the great sympathetic communicating with them to the liver.

Dr. Budd shows the connexion betwixt the liver and the lungs. When we breathe pure air, and in sufficient quantity, the lungs perform their natural office in taking in oxygen, which consumes the carbon or waste matter perfectly; if we take little outdoor exercise, or breathe impure air (and which is also deficient in oxygen), the carbon is not consumed, and the useless and offensive matter remains in the system, doing mischief, except so far as the liver can take up the office of the lungs. The body is so constructed that other organs will temporarily assist any weak organ, or counteract the over-work or deficient nutriment of another; but if this strain is continued, the assisting organs are overtaxed, and the inactive organ becomes weaker from want of use. So sedentary and indolent persons throw on the liver part of the work of the lungs, and become chronic dyspeptics.

Andral, and many other writers, have remarked that congestion of the liver from impeded circulation through the lungs, when long continued, often leads to organic disease: and they have thus accounted for the frequent association of organic disease of the liver with organic disease of the heart.

There is a direct and fundamental relation between the function of the liver and that of the lung. Fortunately, the activity and effects of the respiratory process are largely under our control. In the vast power we have of modifying these by appropriate regulations, having reference to the great conditions of air, exercise, temperature, and food, we have means much more effectual than any other in dealing with biliary disorders.

Of these disorders, on the other hand, the neglect of such regulations is by far the most fruitful source.

Thus, for example, may be explained many of the bilious disorders of hot climates. If, in such climates, the food be not regulated in accordance with the smaller needs of the economy as to animal heat, an excess of bile is formed, and disorder of the stomach and intestines—bilious vomiting and diarrhœa—is the consequence.

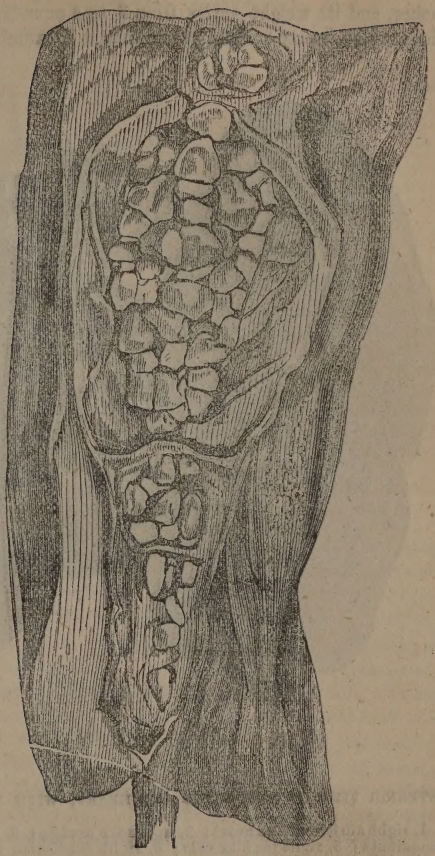
Hence, also, the general repugnance to rich meats, and the greater tendency which these and spirituous liquors unquestionably have to produce disease of the liver, in hot seasons and in tropical climates.

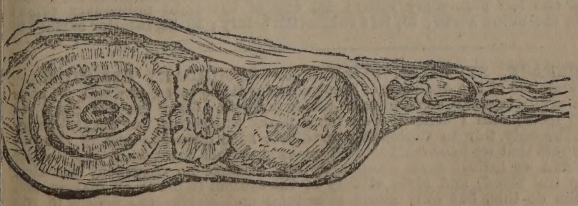
In the same way may be explained the greater frequency of bilious disorders in middle life, when men begin to take less exercise, and their respiration becomes less active, while, on the other hand, the tendency to indulgence at table but too often increases.

We may also often see inverse evidence of these relations in the effect of pure air and active exercise, in relieving various disorders that result from repletion, and from the retention of principles which, if not burnt in respiration, should pass off by the liver as bile. Every sportsman must have remarked the effect of a single day's hunting in clearing the complexion. It has, no doubt, much the same effect on the liver as on the skin.—*Budd.*

"The liver in health measures about 12 inches from side to side, and 6 or 7

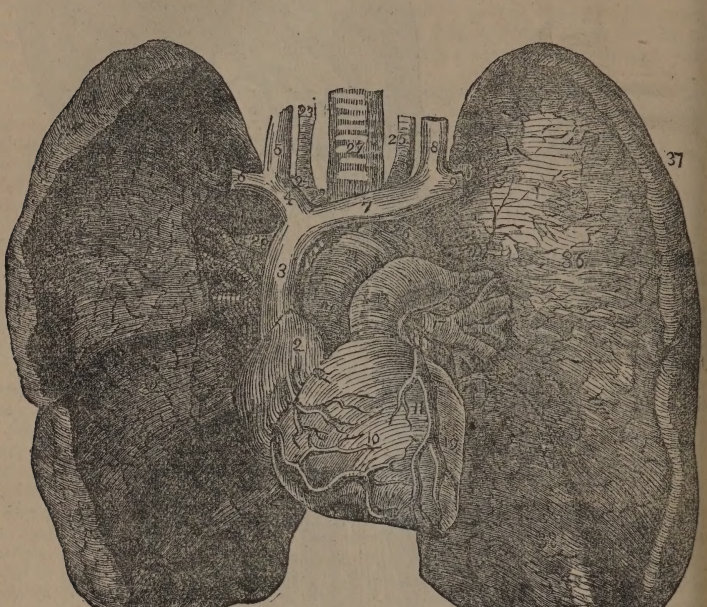
Gall-bladder filled with gall-
ones, which have all a crust
pure cholesterine. From a
an, 64 years of age, who died
King's College Hospital, of
ftening of the brain. No
sease of the liver was sus-
cted.—*Budd.*





Gall-bladder and cystic duct containing gall-stones. The calculi have all a crust of pure cholesterine.

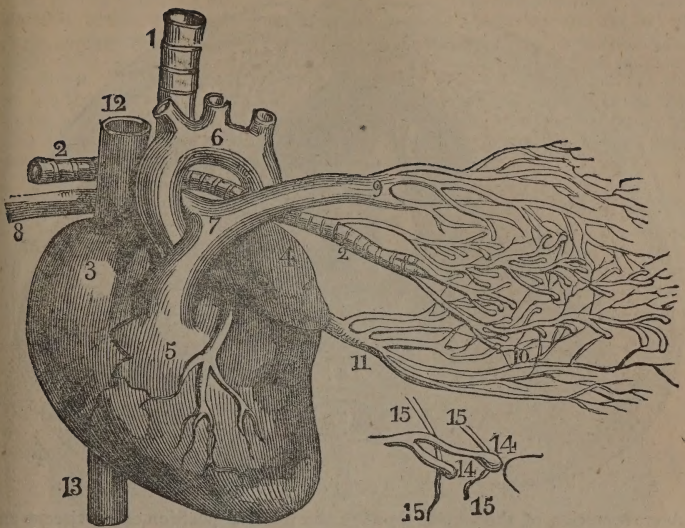
from its antero-posterior diameter; its bulk corresponds to nearly 100 cubic inches, and its weight varies from 3 to 4 pounds, according to the quantity of blood which it may contain at the time it is examined."—*Dr. Beale.*



ANTERIOR VIEW OF THE LUNGS AND HEART, WITH THEIR GREAT VESSELS.—*Quain.*

1, right auricle of the heart; 2, appendix auricle; 3, superior vena cava; 4, right vena innominata; 5, right jugular vein; 6, right subclavian vein; 7, the left vena innominata; 8, the left internal jugular vein; 9, the subclavian vein; 10, the right ventricle; 11, branches of the great coronary artery; 12, ditto of the right; 13, pulmonary artery; 14, left ditto; 15, the right pulmonary artery entering the right lung; 16, appendix of left auricle; 17, one of the left pulmonary veins; 18, one of the right pulmonary veins; 19, left ventricle; 20, ascending aorta; 26, left subclavian artery; 36, 38, interior surface of the lungs.

VENEREAL DISEASE, SYPHILIS, FIRST AND SECONDARY SYMPTOMS.—I have lately been reminded of the omission of treatment for these cases, of which we have had hundreds successfully treated' some females under my wife. They are not cases we are very desirous to have; still I believe, from many years' experience, our natural restorative treatment is the only way to thoroughly eradicate such diseases; and of this we have had so many proofs that we have confidence in making perfect cures when every other means have failed, and we believe must necessarily fail, because no treatment but that alone which purifies the blood, and gives vitality to the system to throw off disease, can cure. No physic can do this, but only allays symptoms and retains the poison in the frame. I had last year a severe case of lost sight of one eye from syphilitic inflammation, the sight of the other going, and the frame in a wretched state, although under the care of an experienced medical practitioner. I could assure the patient of a thorough restoration



1. The trachea; 2. The right and left bronchus; the left bronchus showing its division into smaller and smaller branches in the lung, and the ultimate termination of the branches in the air vesicles. 3. Right auricle of the heart. 4. Left auricle. 5. Right ventricle. 6. The aorta arising from the left ventricle, the left ventricle being in this diagram concealed by the right. 7. Pulmonary artery arising from the right ventricle and dividing into, 8, The right, and, 9, The left branch. The latter is seen dividing into smaller and smaller branches, and ultimately terminating on the air vesicles. 10. Branches of one of the pulmonary veins proceeding from the terminations of the pulmonary artery on the air vesicles, where together they form the network of vessels termed the Rete Mirabile. 11. Trunk of the vein on its way to the left auricle of the heart. 12. Superior vena cava. 13. Inferior vena cava. 14. Air vesicles magnified. 15. Blood-vessels distributed upon them.—*Dr. Smith.*

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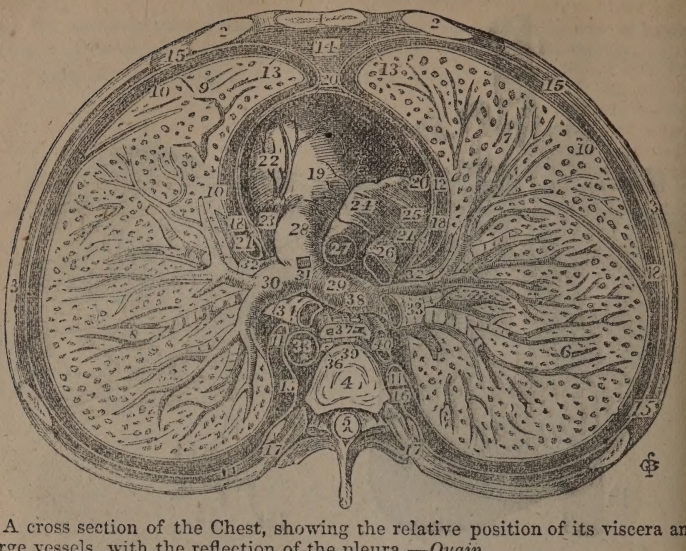
to health, and the sound sight of both eyes, and that it was only a question of time. He not thoroughly hearty, with perfect sight of both eyes. Two cases, where one testicle actually protruded through an abscess opening in the scrotum, got quite sound. Another, the back of the throat sloughing, got quite sound. We never use any medicine whatever for these cases, no injections, no lotions. The treatment simply consists in warm or tepid sitz baths, see 105½ Bath list, 90, 115½; bandages as 168¾, 220, 169½ night, or night and day at first, or 168¾, 174 less cumbrous, in day time. 98 sometimes useful, and sitting over steam. This can be done by putting boiling water in a night commode. The most important is the general treatment to get up vigour in the stomach, liver, and kidneys. No stimulants, little animal food. 50, 141, 48, 64, 70¾, 52, 19, 14, and as strength improves, 14, 15, or 9, 18; but cold sitz will not do until long time after perfect recovery, or congestion will take place, from the organs being weak. 115½ good, 114, 113, 124. Such cases we do not allow to have baths, except in a private room, and on no account to use baths or bath apparatus used by other patients. Venereal disease is far more infectious than is imagined. Great care is necessary with bathmen and women that they do not become inoculated, which has been the case from carelessness.



A cross section of the Chest, showing the relative position of its viscera and large vessels, with the reflection of the pleura.—*Quain.*

3, 3, the upper borders of two ribs forming the boundaries of the section; 4, the upper surface of a dorsal vertebra (spine); 5, section of spinal marrow; 6, section of the right lung, its superior lobe; 7, section of middle lobe; 8, section of lobe of left lung; 9, its inferior lobe, the structure of the lung is seen upon the surface of these sections; 10, 10, the pleura pulmonalis of the two lungs; 12, 12, the pleura lining the external surface of the pericardium or heart-bag at each side; 17, the sympathetic nerve on each side; 18, 18, the cavity of the pleura at each side; 19, the heart; 20, 20, pericardium enclosing the heart; 22, left ventricle; 19, right ditto; 27, ascending aorta; 28, right pulmonary artery; 30, left ditto; 36, thoracic duct; 37, œsophagus or gullet; 39, right pneumogastric nerve.

PLEURA.—From the Greek word for a rib, or the side of the thorax formed by the ribs, but now applied by anatomists to the membrane which lines the internal surface of the thorax, and covers its viscera. It forms a great process, the mediastinum, which divides the thorax into two cavities. Its use is to render the surface of the thorax moist by the vapour it exhales. The cavity of the thorax is everywhere lined by this smooth and glistening membrane, which in reality consists of two distinct portions or bags, which, by being applied to each other laterally, form the septum called mediastinum: this divides the cavity into two parts, and is attached posteriorly to the vertebræ of the back, and anteriorly to the sternum. But the two laminæ of which this septum is formed do not everywhere adhere to each other: for at the lower part of the thorax they are separated, to afford a lodgment to the heart; and at the upper part of the cavity they receive between them the thymus gland. The pleura is plentifully supplied with arteries and veins from the internal mammary and the intercostals. Its nerves, which are very inconsiderable, are derived chiefly from the dorsal and intercostal nerves. The surface of the pleura, like that of peritonæum and other membranes lining cavities, is constantly bedewed with a serous moisture, which prevents adhesions of the viscera,

The mediastinum, by dividing the chest into cavities, obviates many inconveniences to which we should otherwise be liable. It prevents the right and left lungs from compressing each other when we lie on one side, and consequently contributes to the freedom of respiration, which is disturbed by the least pressure on the lungs. If the point of a sword penetrates between the ribs into the cavity of the thorax, the lung on that side ceases to perform its office, because the air being admitted through the wound, prevents the dilatation of that lung; while the other lung, which is separated from it by the mediastinum, remains unhurt, and continues to perform its functions as usual—*Hooper*.

The following is quoted from Lardner:—

"DORSAL SURFACE OF TONGUE.—It is on the superior surface, or *dorsum*, as

Fig. 415.

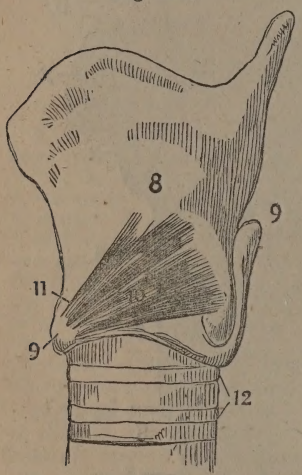
DORSAL SURFACE OF THE TONGUE, SHOWING ITS PAPILLARY STRUCTURE.—*Sappey*.

the anatomists call it, that the papillæ prevail in the greatest numbers. A view of the dorsum is given in fig. 415, from the work of Professor Sappey, which is by far the most accurate and elaborate representation of the organ which I have seen.

"That anatomist classes the lingual papillæ in four orders called Calyciform, Fungiform, Corolliform, and Hemispherical."

FUNGIFORM PAPILLÆ.—In front of the papillæ here described, and occupying the middle third of the length of the tongue, are found numerous others, much less voluminous, but more numerous and more closely packed together, like the pile of velvet. These stand perpendicular to the lingual surface, and are not inclined backwards, as was maintained by Malpighi. They are generally arranged in parallel lines emerging from the axis of the tongue, as branches emerge from the stem of a leaf. These papillæ have generally a form resembling that of a mushroom, being expanded at the summit and contracted at the base, whence they have derived the name of *fungiform*. Their magnitude is greater than that of other papillæ by which they are surrounded, but very inferior to that of the calyciform above described. These fungiform papillæ are shown in Fig. 415[3].

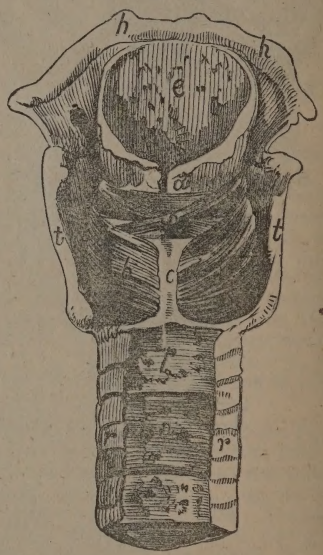
Fig. 453.



SIDE VIEW OF THE LARYNX AND PART OF THE WINDPIPE. (*Lardner.*)

8. Thyroid. 9, 9, Cricoid. 10 Crico-thyroid muscle. 11. Crico-thyroid membrane. 12. Upper rings of trachea.

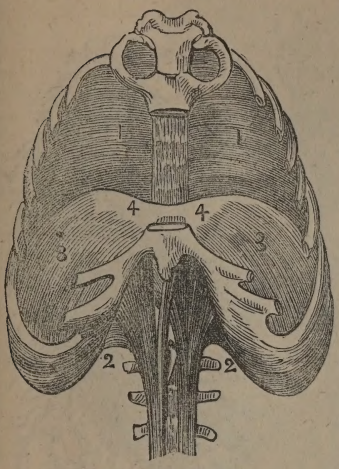
Fig. 454



TOP OF THROAT AND TRACHEA DISSECTED. (*Lardner.*)

a. Right arytenoid cartilage. *t, t*. Posterior margins of thyroid. *c*. Back of cricoid. *h*. Hyoid bone. *e* Epiglottis. *b*. Left posterior-crico-arytenoid muscle. *s*. Arytenoid muscle. *l*. Fibrous membrane at back of trachea, with glands lying on it. *n*. Muscular fibres of trachea. *r*. Cartilaginous rings of trachea.

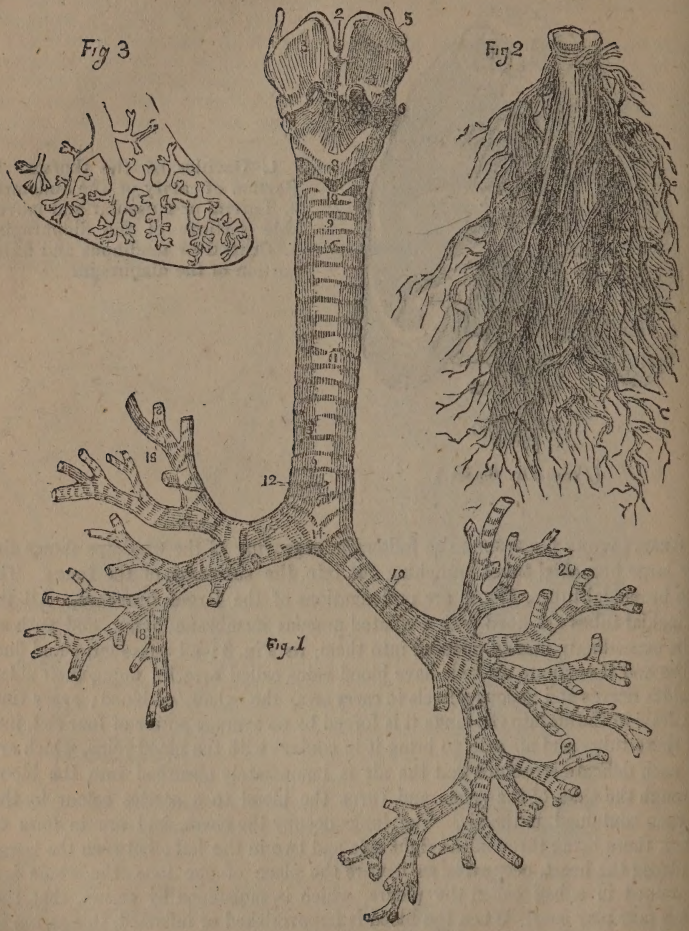
VIEW OF THE DIAPHRAGM.



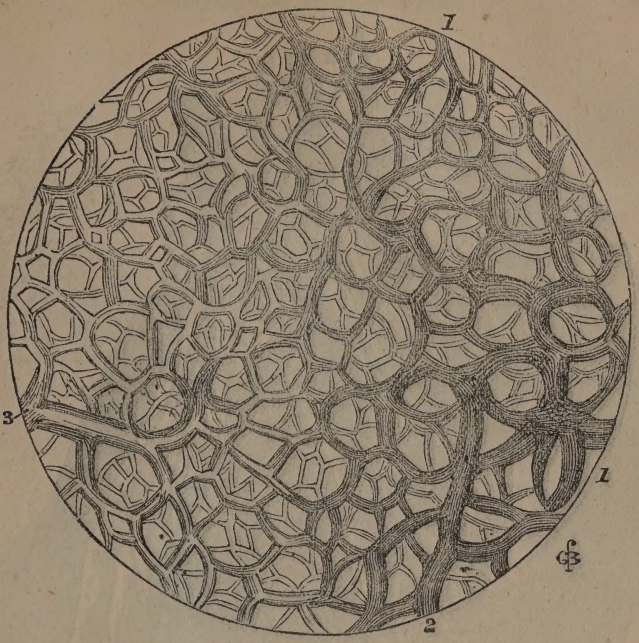
1. Cavities of the thorax. 2. Portion of cavity of the abdomen 3. Lateral or muscular and moveable portions of the diaphragm. 4. Central or tendinous and fixed portion of the diaphragm.

(*From Dr. Smith.*)

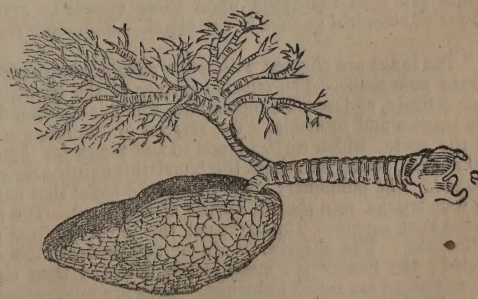
RESPIRATORY ORGANS.—The following engraving of the windpipe shows also the large bronchial tubes branching out into the substance of the lungs. The fine bronchial tubes, Fig. 2, are prolongations of the larger branches. All the bronchial tubes are lined with a ciliated mucous membrane lining, and with air cells exceedingly minute opening into them, as Fig. 3; all these large and finer tubes and the minute air cells have blood veins called arteries lining their sides, besides nerves and venous vessels to carry away the exhausted blood; every time we draw in the air into the lungs it is forced by an average power of four cwt. into all these tubes and air cells to bring it in contact with the blood veins, which are of such delicate structure that the air is immediately absorbed into the blood through the sides of the veins, and turns the blood to a scarlet colour by the oxygen contained in the air. The lungs occupy the chest, and are in form of lobes, there being three in the right side and two in the left; between the latter is placed the heart, occupying as it were the place of one lobe, the whole are contained in a bag called the pleura, which is moistened by serum, that the lungs may play easy. When the blood is impoverished or inflamed, this serum is wanting, and adhesion often takes place.—*Engravings from Quain and Wilson.*



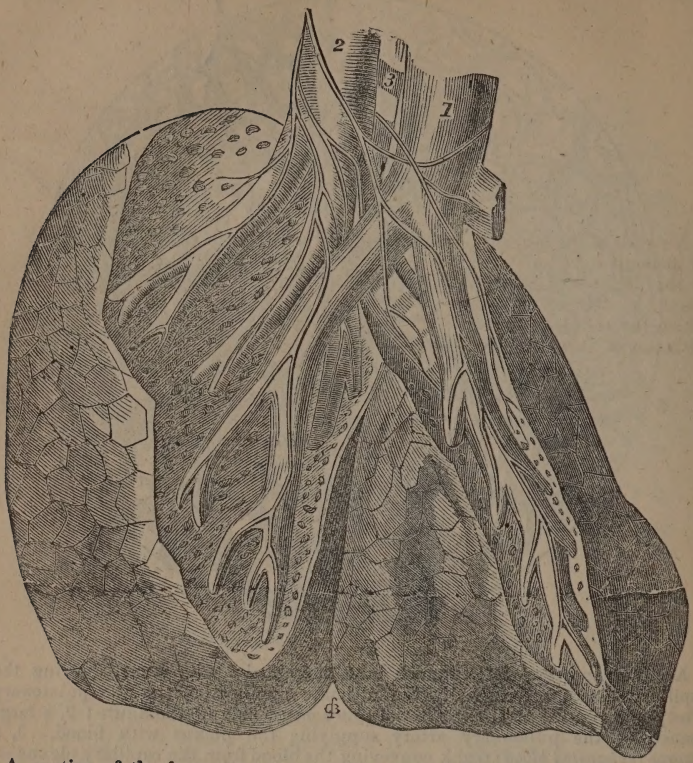
No. 1, windpipe with large bronchial tubes. No. 2, small bronchial tubes ramifying into the lungs. No. 3, air cells lining the bronchial tubes. See description of above cut, preceding page, 35 .



A minute portion of the human lung magnified 50 diameters, showing the capillary network formed by the ultimate ramifications of the pulmonary artery and veins. 1, 1, the arterial (*pure blood*) side of the figure; 2, a large branch of the pulmonary artery supplying the plexus with blood. 3, a venous (*exhausted blood*) trunk conveying the blood from the capillary plexus.—*Quain.*

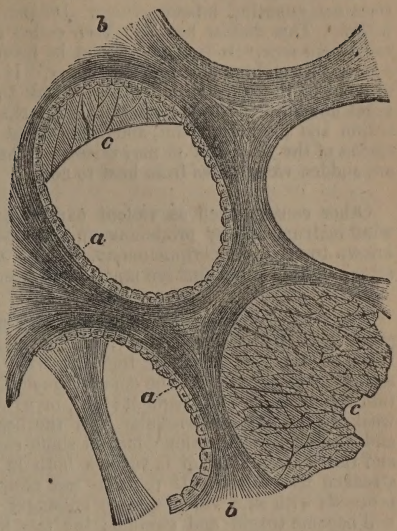


The windpipe, one lung, and the bronchial tubes shown on the left, the substance of the lungs cut away; *a* is the top of the windpipe. It is estimated that the surface of the bronchial tubes and air-cells in the lungs cover a space of thirty thousand square inches, underneath which the blood circulates, and to this space the air comes to oxygenize the blood.



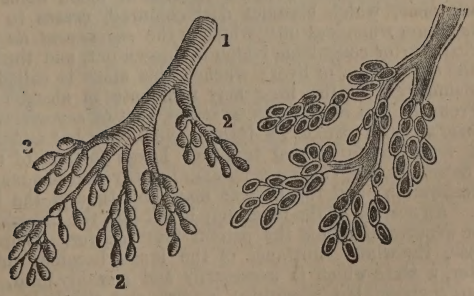
A portion of the lung, showing the distribution of the nervous filaments of the pulmonary plexuses around the vessels and bronchial tubes. 1, the pulmonary vein bringing blood to be oxygenized; 2, the pulmonary artery returning blood now fit for circulation; 3, the bronchial tube, the nervous filaments are seen ramifying upon these vessels to give motion, sensation, and power of chemical change in the blood.—*Engraving from Quain.*

"The lungs are covered with a fine membrane, a reflection of the pleura, called *pleura pulmonalis*. The internal surface of the air-cells is covered with a very fine, delicate, and sensible membrane, which is continued from the larynx through the trachea and bronchia. The arteries of the lungs are the bronchial, a branch of the aorta, which carries blood to the lungs for their nourishment; and the pulmonary, which circulates the blood through the air-cells to undergo a certain change. The pulmonary veins return the blood that has undergone this change, by four trunks, into the left auricle of the heart. The bronchial veins terminate in the vena azygos. The nerves of the lungs are from the eighth pair and great intercostal. The absorbents are of two orders, the superficial and the deep-seated; the former are more readily detected than the latter. The glands of these viscera are called bronchial. They are muciparous, and situated about the bronchia."—*Dr. Hooper.*



Air-cells of the lungs magnified 50 diameters. *a*, epithelial lining of the cells; *b*, fibres of elastic tissue; *c*, delicate membrane, of which the cellule is constructed, with elastic fibres attached to it.

VIEW OF THE BRONCHIAL TUBES, TERMINATING IN AIR VESICLES.



External view.—1. Bronchial tube. 2. Air vesicles.

FROM *Hooper*.—PNEUMONITIS. (From the Greek—the lung, and *itis*, the terminal, denoting inflammation). Inflammation of the lung. See Bronchitis, p. 266. This disease has also been called *Pneumonia*, *Peripneumonia*, and *Peripneumonia vera*. It is characterised by fever, difficulty of breathing, cough, and a sense of weight and pain in the thorax. It is mostly produced by the application of cold to the body, which gives a check to the perspiration, and determines a great flow of blood to the lungs. It attacks principally those of a robust constitution and plethoric habit, and occurs most frequently in the winter season and spring of the year; but it may arise in either of the other seasons, when there are sudden vicissitudes from heat to cold.

Other causes, such as violent exertions in singing, speaking, or playing on wind-instruments, by producing an increased action of the lungs, have been known to occasion peripneumony. Those who have laboured under a former attack of this complaint are much predisposed to returns of it.

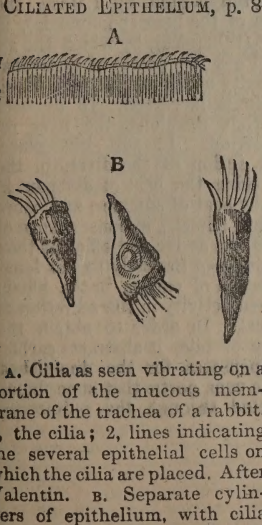
The true peripneumony comes on with an obtuse pain in the chest or side, great difficulty of breathing (particularly in a recumbent position, or when lying on the side affected), together with a cough, dryness of the skin, heat, anxiety, and thirst. At the commencement of the disease, the pulse is usually full, strong, hard, and frequent; but, in a more advanced stage, it is commonly weak, soft, and often irregular. In the beginning, the cough is frequently dry and without expectoration; but, in some cases, it is moist, even from the first, and the matter spit up is various both in colour and consistence, and is often streaked with blood. If relief is not afforded in time, and the inflammation proceeds with such violence as to endanger suffocation, the vessels of the neck will become turgid and swelled; the face will alter to a purple colour; an effusion of blood will take place into the cellular substance of the lungs, so as to impede the circulation through that organ, and the patient will soon be deprived of life. If these violent symptoms do not arise, and the proper means for carrying off the inflammation have either been neglected, or have proved ineffectual, although adopted at an early period of the disease, a suppuration may ensue, which event is to be known by frequent slight shiverings, and an abatement of the pain and sense of fulness in the part, and by the patient being able to lie on the side which was affected without experiencing great uneasiness.

When peripneumony is not resolved, an effusion of blood takes place into the pulmonary substance, which becomes dark-coloured, ceases to crepitate, and emits a bloody serum when cut into, which is the *engouement du poumon* of the French pathologists: or coagulable lymph is thrown out, and the lung becomes solid and of the appearance of liver; whence this state is called *hepatisation:* or, lastly, inflammation of the lung may terminate in abscess more or less extensive. From the first of these three states, that of *engouement*, the affected part may recover so as to resume its former functions; but a hepatised portion of lung never recovers its natural texture. Large portions of the lung, however, may be hepatised, and yet the remaining healthy portions may be sufficient to carry on respiration; and the patient may live, though the breathing can never be free. An abscess of the lungs may break into the bronchial tubes; the matter may be expectorated, and the patient may recover. Where pneumonia is very intense, the whole substance of the lungs becomes infiltrated with purulent matter, a state which is necessarily and speedily fatal. Gangrene of the lungs is not common, but sometimes occurs, and chiefly in exhausted constitutions. It is indicated by the peculiar fœtor of the expectoration. Portions of the lungs have sloughed away, and yet the patient has recovered; but this is very uncommon. Generally speaking, when acute inflammation of the lungs produces the state of engouement, hepatisation, or abscess, to any extent, the case is fatal.

MUCOUS MEMBRANES.—The *mucous membranes* line all those passages by which internal parts communicate with the exterior, and by which either matters are eliminated from the body or foreign substances taken into it. They are soft and velvety, and extremely vascular. Their basis, or proper texture, seems to belong to the albuminous structures. The internal, or free surface, of the mucous membranes is at every part invested with one or more layers of epithelial cells, which are separated from the vascular tissue by the layer of basement membrane.

The mucous membranes are described as lining certain principal tracts. 1. The *digestive tract* commences in the cavity of the mouth, from which prolongations pass into the ducts of the salivary glands. From the mouth it passes through the fauces, pharynx, and œsophagus, to the stomach, and is thence continued along the whole tract of the intestinal canal to the termination of the rectum, being in its course arranged in the various folds and depressions, and prolonged into the ducts of the pancreas and liver, and into the gall-bladder. 2. The *respiratory tract* includes the mucous membrane lining the cavity of the nose, and the various sinuses communicating with it, the lachrymal canal and sac, the conjunctiva of the eye and eyelids, and the prolongation which passes along the Eustachian tubes and lines the tympanum and the inner surface of the membrana tympani. Crossing the pharynx, and lining that part of it which is above the soft palate, the respiratory tract leads into the glottis, whence it is continued through the larynx and trachea, to the bronchi and their divisions, which it lines as far as the branches of from one-fiftieth to one-thirtieth of an inch in diameter. 3. The *genito-urinary* tract, which lines the whole of the urinary passages, from the external orifice to the termination of the tubuli uriniferi of the kidneys, extends into and through the organs of generation in both sexes, into the ducts of the glands connected with them, and in the female becomes continuous with the serous membrane of the abdomen at the fimbriæ of the Fallopian tubes.—*Kirke.*

CILIATED EPITHELIUM, p. 84.—(*From Kirke and White.*)—This consists in the incessant vibration of fine, pellucid, blunt processes, about one-thousandth of an inch long, termed cilia, situated on the free extremities of the cells of epithelium covering certain surfaces of the body. The form of epithelium on which cilia occur is most commonly of the cilindrical kind; but sometimes, as on the surface lining the cerebral ventricles, it is of the tesselated variety.



A. Cilia as seen vibrating on a portion of the mucous membrane of the trachea of a rabbit. 1, the cilia; 2, lines indicating the several epithelial cells on which the cilia are placed. After Valentin. B. Separate cylinders of epithelium, with cilia attached, from the trachea of the cat. After Henle.

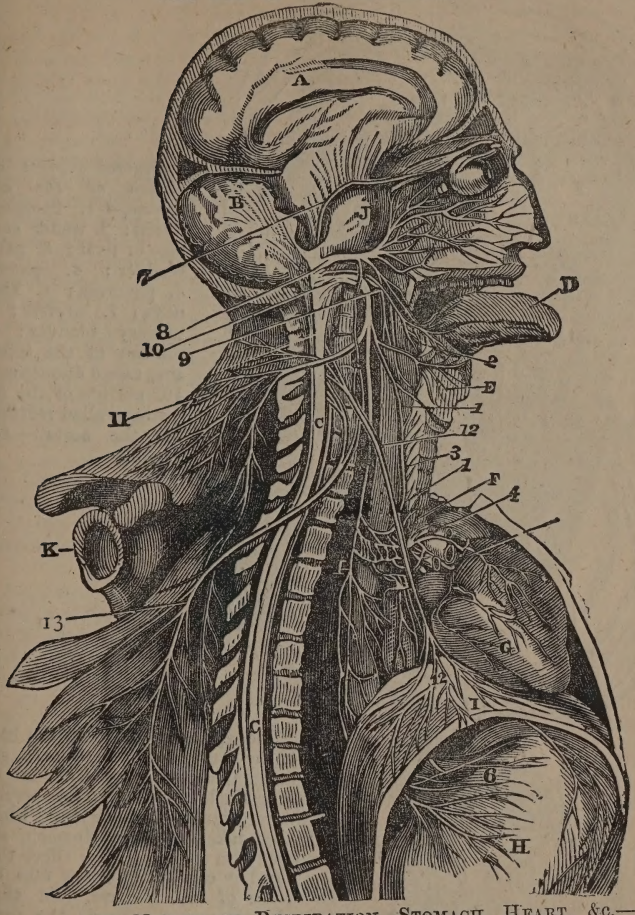
In man, and probably in Mammalia generally, the ciliary epithelium lines the interior of the nasal cavity, except the olfactory region, and of the frontal and other sinuses communicating with it, the lachrymal canal and sac, and is spread over the mucous surface of both eyelids, but not over the conjunctiva covering the eye itself. From the posterior part of the nasal cavity, it passes to the upper part of the pharynx, which it lines to about opposite the lower border of the atlas; it is also spread over the upper surface of the soft palate, and laterally is continued to the orifice of the Eustachian tube, through which canal it extends into the cavity and membrane of the tympanum. Ciliary epithelium occurs also over the whole extent of the respiratory mucous tract, commencing at the larynx, and ceasing only near the terminations of the bronchi. It is met with also in

the female generative apparatus, commencing about the neck of the uterus, extending along the Fallopian tubes to their fimbriated extremities, and continued for a short distance along the peritoneal surface of the tubes; and in the male it occurs in the epididymis.

If a portion of ciliary mucous membrane from a living or recently dead animal be moistened, and examined with a microscope, the cilia are observed to be in constant motion, either whirling round their fixed extremities so that their ends describe circles, or waving continually backwards and forwards, and alternately rising and falling with a lashing or fanning movement. During the lashing movements each of the cilia performs a motion somewhat similar to that performed during the feathering of an oar in rowing: hence the general result of their movements is to produce a continuous current in a determinate direction; and this direction is invariably the same on the same surface, being usually towards its external orifice. In the production of such current probably consists the principal use of the cilia, which are thus enabled to propel the fluids or minute particles which come within the range of their influence, and to aid in their expulsion from the body.

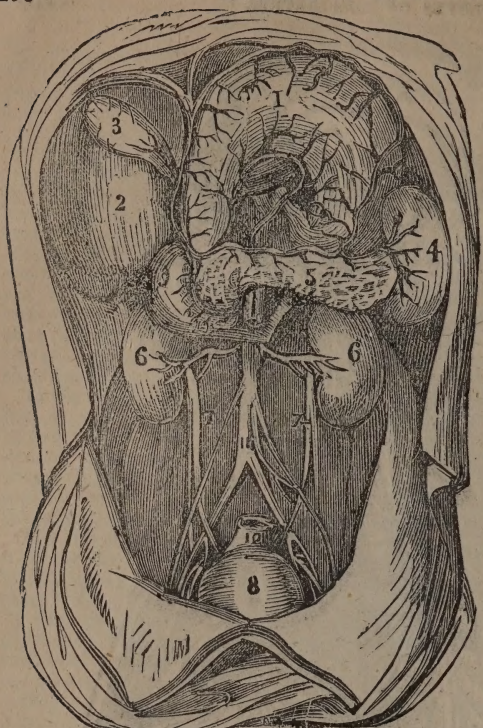
In the frog, triton, and probably most or all other naked Amphibia, the epithelium at and just within the neck or commencing dilatation of the Malpighian capsule (*in the kidneys*) is ciliated. This fact is, perhaps, connected with the peculiar arrangement of the seminal tubes or branches of the vasa deferentia, which open into one end of the Malpighian capsules, while the urine-tubes open into the others. The cilia work towards the seminal tubes, and would prevent the seminal fluid from mingling with the urine.

The following observations, by Dr. Smith, show the cause of liver diseases from residence in hot climates; the physical conformation not being adapted from infancy to the atmosphere, and from having been accustomed in this or other colder climates to breathe air more highly charged with oxygen:—"Pathology confirms the evidence derived from comparative anatomy and physiology. When the function of the lung is interrupted by disease, the activity of the liver is increased. In inflammation of the lung (pneumonia), in the deposition of adventitious matter in the lung (tubercles), by which the air vesicles are compressed and obliterated, the lung loses the power of decarbonizing the blood in proportion to the extent and severity of the disease with which it is affected. In this case the secretion of bile is increased. In diseases of the heart, the liver is enlarged. In the morbus cæruleus, the liver retains through life its fœtal state of disproportion. In the last place, there is a striking illustration of the respiratory action of the liver, in the vicarious office which it performs for the lung, during the heat of summer in cold, and all the year round in hot climates. In the heat of summer, and more especially in the intense and constant heat of a warm climate, in consequence of the rarefaction of the air, respiration by the lung is less active and efficient than in the winter of the cold climate. During the exposure of the body to this long-continued heat, there is a tendency to the accumulation of carbon in the blood. An actual accumulation is prevented, by an increased activity in the secretion of bile, to which the liver is stimulated by the heat. In order to obtain the material for the formation of this unusual quantity of bile, it abstracts carbon largely from the blood; to this extent it compensates for the diminished efficiency of the lung, and thus removes through the vena portæ that superfluous carbon which would otherwise have been excreted through the pulmonary artery next."

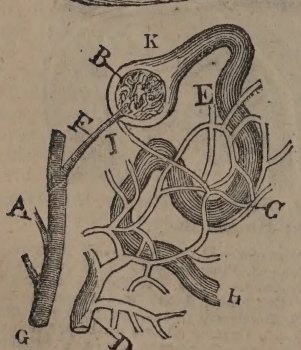


PLAN OF THE NERVES OF RESPIRATION, STOMACH, HEART, &c.—From Sir C. Bell's "Anatomy of the Human Body."

A. Cerebrum.—B. Cerebellum.—CC. Spinal Marrow.—D. Tongue.—E. Larynx.—F. Bronchia.—G. Heart.—H. Stomach.—I. Diaphragm.—J. Pons Varolii.—K. Glenoid cavity of scapula or shoulder-joint articulation of blade-bone.—1. 1. 1. Par Vagum, arising by a single set of roots, and passing to the larynx, the lungs, heart, and stomach.—2. 2. Superior laryngeal branches of the par vagum.—3. Recurrent or inferior laryngeal of the par vagum.—4. Pulmonic plexus of the par vagum.—5. Cardiac plexus of the par vagum.—6 Gastric plexus or corda ventriculi of the par vagum.—7. Fourth nerve, a branch of this system to the trochlearis muscle.—8. Respiratory nerve or portio dura to the muscles of the face, arising by a series of single roots.—9. Branches of the glosso-pharyngeal.—10. Origins of the superior external respiratory or spinal accessory nerve.—11. Branches of the last nerve to the muscles of the shoulder.—12. 12. 12. Internal respiratory, or the phrenic to the diaphragm. The origins of this nerve may be seen to pass much higher up than they are generally described.—13. Inferior external respiratory to the serratus magnus.



General view of the viscera of the abdomen.—1. Stomach raised; 2. under surface of liver; 3. gall-bladder; 4. spleen; 5. pancreas; 6. kidneys; 7. ureters; 8. urinary bladder; 9. portion of the intestine called duodenum; 10. portion of the intestine called rectum; 11. the aorta.—*Dr Smith.*

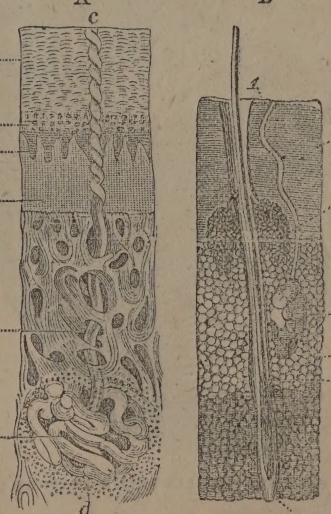


THE KIDNEYS.

The kidneys are situated in the back part of the body, behind the stomach, and just under the lower ribs. They are for purifying the blood, and also for carrying off the principal part of the liquid which has been taken into the stomach, and absorbed into the blood. To effect this, the blood is carried by veins into the substance of the kidneys, and there the electric power extracts the urine from the blood, and along with it, impurities which, if suffered to remain in the blood, would bring on disease and death. The engraving will show the plan of the veins which circulate in the kidneys. It only shows a few of them; the number of similar ones in both kidneys can scarcely be numbered. For instance, the uriniferous tubes, H, are in bundles of twenty together. All these little suction pipes are at work at the same time, extracting the urine from the blood. G is the vein bringing the blood into the kidneys. A and B are small

veins that branch off like twigs in great numbers from the main veins, and each ends in a tuft or ball of veins B. H is a uriniferous tube, one end of which, K, incloses the tuft of veins B, from which tuft it extracts the urine from the blood, and carries it down to H, and forward to large ducts which receive all the tubes, and convey their contents (urine) into the bladder. A vein, I, takes away the purified blood and unites with a number of other similar veins, E and C, which are performing the same office to other uriniferous tubes. These unite in the vein D, and carry the blood back through various intricate tubes again to the heart, to be again mixed with new material, which, after being pumped into the lungs, to receive the oxygen from the air, again comes round to the same minute vessels, to be again purified. B, the Malpighian tubes.

"SECRETION OF URINE.—The separation of urine from the blood is probably effected, like other secretions, by the agency of gland cells, and equally in all parts of the urine tubes; the urea and urid acid, and, perhaps, some of the other constituents existing ready formed in the blood, may need only separation, that is, they may pass from the blood to the urine without further elaboration; but this is not the case with some of the other principles of the urine, such as the acid phosphates and the sulphates, for these salts do not exist in the blood, and must be formed by the chemical agency of the cells. The large size of the renal arteries and veins permits so rapid a transit of the blood through the kidneys, that the whole of the blood is purified by them. The secretion of urine is rapid in comparison with other secretions, and as each portion is secreted it propels those already in the tubes onward into the pelvis. Thence through the ureter the urine passes into the bladder. Observations show how fast some substances pass from the stomach through the circulation, and through the vessels of the kidneys. Ferrocyanate of potash so passed, on one occasion, in one minute; vegetable substances, such as rhubarb, occupied from sixteen to thirty-five minutes."—*Kirke*, 339.



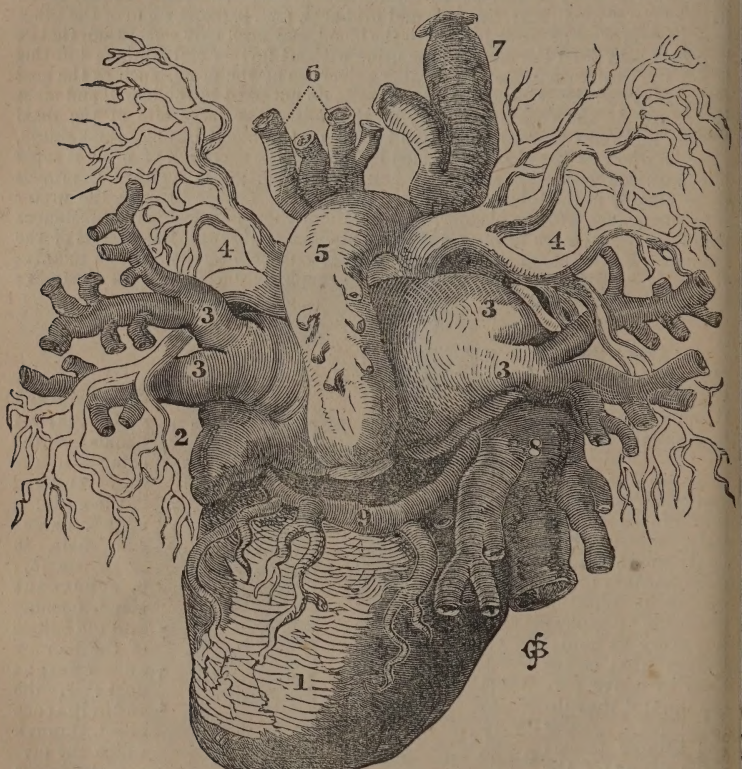
A is a sudoriferous gland; *b*, *c*, the duct, which comes out on the surface of the skin in a spiral form; it is calculated that there are 7 to 8 millions of these in the skin of the human body, measuring a total length of 28 miles, and they throw out about 2lbs. in insensible perspiration every 24 hours, besides what comes away by active perspiration; *d*, the subcutaneous cellular and adipose tissue; *e*, the derma; *f*, the papilla; *g*, the rete mucosum; *h*, the epidermis.

Sebaceous and sudoriparous glands of the skin. 1, the thin cuticle; 2, the cutis; 3, adipose tissue; 4, a hair, in its follicle (5); 6, sebaceous gland, opening into the follicle of the hair by an efferent duct; 7, the sudoriparous gland, through which the perspiration passes outwards.

SECTIONAL CUT OF THE SKIN HIGHLY MAGNIFIED.

Fig. *A.* shows the corkscrew pores of the skin, computed at eight millions in a human body, and twenty-eight miles in length; these discharge from two to three pounds of waste matter in twenty-four hours. *B* is a magnified section of the skin, showing the position and growth of a hair.

STRUCTURE OF SKIN.—Taking the skin, in the ordinary popular acceptation of the term, as the tegumentary coating of the body extending from the exterior surface to the muscles and other organs, it may be considered as consisting of three distinct layers, the innermost of which is composed of cellular and adipose matter of soft texture. The middle, called the *true skin, derma* or *corium*, is a strong and tough web of interlaced fibres, pervaded by blood-vessels, lymphatics, and nerves; and the external, called the *epidermis*, is a species of semi-transparent varnish, totally divested of all vascular or fibrous organs, and altogether insensible. The thickness of this covering, including all its three layers, though varying much in different parts of the body, nowhere exceeds a small fraction of an inch; and it will therefore be apparent that its structure can only be submitted to observation and analysis by means of the microscope.—*Lardner.*



THE HEART.—FROM SIR CHARLES BELL'S ANATOMY OF THE HUMAN BODY.

Fig. 1, left ventricle; 2, left auricle; 3, 3, 3, 3, pulmonic veins; 4, 4, two great branches of pulmonic artery; 5, aorta; 6, carotids and subclavians; 7, cava descendens; 8, cava ascendens, with all its branches from the liver; 9, great coronary vein running along the back of the heart, betwixt the auricle and ventricle, in a groove surrounded by fat.

On an average one hogshead of blood passes through the heart every hour, night and day, six ounces at every beat. Lardner says, that if a syphon gauge was inserted into an artery, a column of blood would rise in the tube to the height of seven and a half feet, so great is the force. He also says, "The arteries are flexible tubes composed of three coatings, the innermost or first of which is a thin and extremely smooth membrane lining the ventricle, and is adapted to allow free flow to the current of the blood. This tube is sheathed in another, consisting of a thick, yellowish, highly elastic substance, and of annular structure, and of involuntary muscular fibres, the rings composing it having their planes at right angles to the direction of the artery. This is again invested with an external coating of dense and close cellular texture. Thus, the structure of the arteries may be said to resemble the hose of a fire-engine.

Muscles of the Heart.—When the extensive apparatus of flexible pipes and tubes, through which the blood must be propelled from the heart to the extremities of the system, chiefly by the force imparted to it by the contractile power of the muscles surrounding the auricles and ventricles, is considered, it will be easily conceived that these muscles must be constructed with extraordinary contractile power.

MUSCLES OF THE AURICLES.

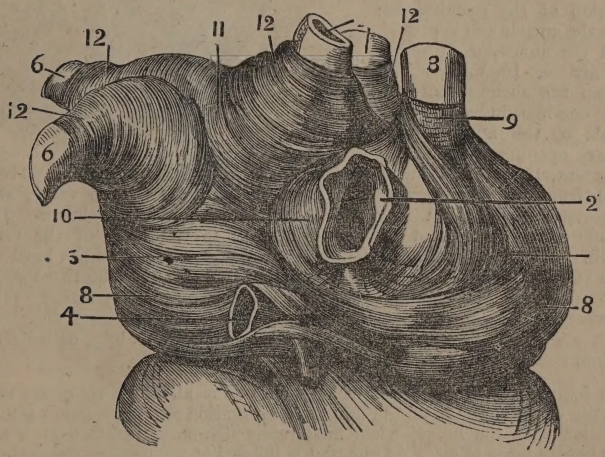
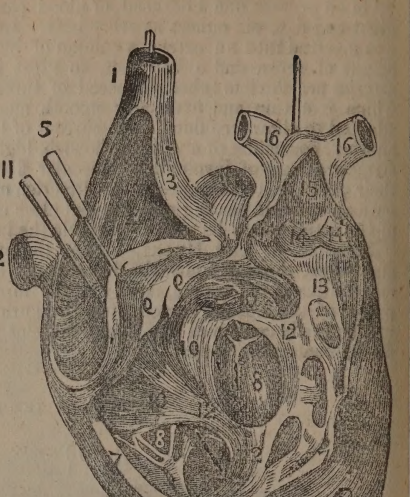


Fig. 317.*

1. Right auricle. 2. Embouchure of inferior hollow vein. 3. Embouchure of superior hollow vein. 4. Embouchure of coronary vein in right auricle. 5. Left auricle. 6, 6. Left pulmonary veins. 7, 7. Right pulmonary veins. 8, 8. Muscles surrounding right and left auriculo-ventricular orifices. 9. Muscles surrounding embouchure of superior vena cava. 10. Muscles surrounding embouchure of inferior vena cava. 11. Muscles separating right from left pulmonary veins. 12, 12, 12, 12. Muscles surrounding embouchures of these veins.—*Dr. Lardner. In rheumatic fever these muscles are often affected from the action of medicine and blisters, weakening the whole system; and hence the frequency of heart disease after rheumatic fever.*

* Sappey.



View of the heart, with the great vessels in connexion with it, on the right side, its different chambers being laid open, and its structure shown. 1. The vena cava superior. 2. The vena cava inferior. 3. Cut edge of the right auricle turned aside to show, 4, the cavity of the right auricle, into which the two venæ cavæ pour the blood returned from all parts of the body. 5. Hook suspending the reflected portion of the wall of the auricle. 6. The right ventricle. 7. Cut edge of the wall of the ventricle, a portion of which has been removed to show, 8, the cavity of the ventricle. 9. Situation of the opening between the auricle and ventricle, called the auricular orifice of the ventricle. 10. Valve placed between the auricles and ventricles, one margin being firmly tached to the auriculo-ventricular opening in its entire extent, the other lying loose in the cavity of the ventricle. 11. Probe passed from the auricle into the ventricle underneath the valve, showing the course of the blood from the former chamber to the latter. 12. The columnæ carneæ attached by one extremity to the walls of the ventricle, the other extremity ending in tendinous threads attached to the loose margin of the valve. 13. Passage to the pulmonary artery. 14. The three semilunar valves placed at the commencement of, 15, the pulmonary artery. 16. The two great branches into which the trunk of the pulmonary artery divides, one branch going to each lung.—*Dr. Smith.* A membranous bag, called the pericardium, contains the heart; see page 387.

The following is from Dr. Smith:—"No one is able by a voluntary effort to expel the whole contents of the lungs. Observation and experiment lead to the conclusion that the lungs, when moderately distended, contain at a medium about twelve pints of air. As one pint is inhaled at an ordinary inspiration, and somewhat less than the same volume is expelled at an ordinary expiration, there remain present in the lungs, at a minimum, eleven pints of air. There is one act of respiration to four pulsations of the heart; and, as in the ordinary state of health there are seventy-two pulsations, so there are eighteen respirations in a minute, or 25,920 in the twenty-four hours. About two ounces of blood are received by the heart at each dilatation of the auricles; about the same quantity is expelled from it at each contraction of its ventricles; consequently, as the heart dilates and contracts seventy-two times in a minute, it sends thus often to the lungs, there to be acted upon by the air, two ounces of blood. It is estimated by Haller that 10,527 grains of blood occupy the same space as 10,000 grains of water; so that if one cubic inch of water weighs 253 grains, the same bulk of blood will weigh 266½ grains. It is ordinarily estimated that on an average one circuit of the blood is performed in 150 seconds; but it is shown that the quantity of air always present in the lungs contains precisely a sufficient quantity

of oxygen to oxygenate the blood, while flowing at the ordinary rate of seventy-two contractions of the heart per minute, for the exact space of 160 seconds. It is therefore highly probable that this interval of time, 160 seconds, is the exact period in which the blood performs one circuit, and not 150 seconds, as former observations had assigned. If this be so, then 540 circuits are performed in the twenty-four hours; that is, there are three complete circulations of the blood through the body in every eight minutes of time. But it has been shown that the weight of the blood is to that of water as 1.0527 is to unity, and that, consequently, 10,527 grains of blood are in volume the same as 10,000 grains of water. From this it results that if in the human adult two ounces of blood are propelled into the lungs at each contraction of the heart, that is, seventy-two times in a minute, there are in the whole body precisely 384 ounces, or twenty-four pounds avoirdupois, which measure 692.0657 cubic inches, or within one cubic inch of twenty imperial pints, which measure 693.1847 cubic inches. By an elaborate series of calculations from these data Mr. Finlaison has deduced the following general results:—1. As there are four pulsations to one respiration, there are eight ounces of blood, measuring 14.418 cubic inches, presented to 10.5843 grains of air, measuring 34.24105 cubic inches. 2. The whole contents of the lungs is equal to a volume of very nearly 411 cubic inches full of air, weighing 127 grains, of which 29.18132 grains are oxygen. 3. In the space of five-sixth parts of one second of time, two ounces or 960 grains weight of blood, measuring $3\frac{3}{4}$ or 3.60451 cubic inches are presented for aëration. 4. Therefore the air contained in the lungs is 114 times the bulk of the blood presented, while the weight of the blood so presented is $7\frac{1}{2}$ times as great as the weight of the air contained. 5. In one minute of time the fresh air inspired amounts to $616\frac{1}{2}$ cubic inches, or, as nearly as may be, eighteen pints, weighing $190\frac{1}{2}$ grains. 6. In one hour the quantity inspired amounts to $1066\frac{2}{3}$ pints, or 2 hogsheads, 20 gallons, and $10\frac{2}{3}$ pints, weighing $23\frac{1}{4}$ ounces and 31 grains. 7. In one day it amounts to 57 hogsheads, 1 gallon, and $7\frac{1}{4}$ pints, weighing $571\frac{1}{2}$ ounces and 25 grains. 8. To this volume of air there are presented for aëration in one minute of time 144 ounces of blood, in volume $259\frac{1}{2}$ cubic inches, which is within 18 cubic inches of an imperial gallon; 9, in one hour 540 pounds avoirdupois, measuring $449\frac{1}{4}$ pints, or 1 hogshead and $1\frac{1}{4}$ pints; and 10, in the twenty-four hours, in weight 12,960 pounds; in bulk $10,782\frac{1}{2}$ pints, that is, 24 hogsheads and 4 gallons. 11. Thus, in round numbers, there flow to the human lungs every minute nearly 18 pints of air (besides the 12 pints constantly in the air vesicles) and nearly 8 pints of blood; but in the space of twenty-four hours, upwards of 57 hogsheads of air and 24 hogsheads of blood."

The following is from Dr. Smith:—"All the arteries of the body proceed from two trunks; that connected with the pulmonic circle—the pulmonary artery, and that connected with the systemic circle—the aorta. These vessels, as they go out from the heart and proceed to their ultimate termination, are arborescent, that is, they successively increase in number and diminish in size, like the branches of a tree going off from the trunk. Each trunk usually ends by dividing into two or more branches, the combined area of which is always greater than that of the trunk from which they spring, in the proportion of about one and a half to one. As the branch proceeds to its ultimate termination it divides and subdivides, until at length the vessel becomes so minute, that it can no longer be distinguished by the eye. These ultimate branches are called capillary vessels, from their hair-like smallness (Fig. 119, 4); but this term does not adequately express their minuteness. It has been stated that the red particle of the blood, at the medium calculation, is not more than the three-thousandth part of an inch in diameter; yet vast numbers of the capillary vessels are so small that they are incapable of admitting one of these particles, and receive only the colourless portion of the blood. Every portion of an artery, by reason of the elasticity of its coats, preserves nearly a cylindrical form; and as the area of the branches is greater than that of the trunks, the blood, in proceeding from the heart to the capillaries, though passing through a series of descending cylinders,

is really flowing through an enlarging space. The disposition of the veins, like that of the arteries, is arborescent, but in an inverse order; for the course of the veins is from capillary vessels to visible branches, and from visible branches to large trunks (Fig. 120, 1, 2, 3). In every part of the body where the capillary arteries terminate the capillary veins begin, and the branches uniting to form trunks, and the small to form large trunks, and the trunks always advancing towards the heart, and always increasing in magnitude as they approach it, form at length the two veins which, it has been stated, return all the blood of the body to the right auricle of the heart. The veins are very much more numerous than the arteries, for they often consist of double sets, and they are at the same time more capacious and more extensible. Reckoning the whole of the blood at one-fifth of the weight of the body, it is estimated that, of this quantity, about one-fourth is in the arterial and the remaining three-fourths in the venous system. The combined area of the branches of the veins is much greater than that of the two trunks in which they terminate (Fig. 120, 1, 2, 3, 4): the blood, therefore, in returning to the heart, is always flowing from a large into a smaller space. The divisions and subdivisions of the artery freely communicate in all parts of the body by means of what are called anastomosing branches, and this communication of branch with branch and trunk with trunk is termed anastomosis. The

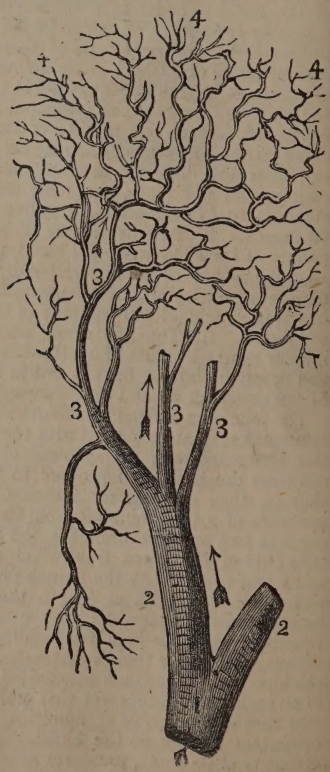


Fig. 119.

View of the manner in which an artery divides and sub-divides into its ultimate branches. 1, trunk of the artery; 2, large branches into which it subdivides; 3, small branches, successively becoming smaller and smaller, until they terminate in, 4, the capillary branches.

same intercommunication, but with still greater freedom and frequency, takes place among the branches of the veins. In both orders of vessels the communication is frequent in proportion to the minuteness of the branch and its distance from the heart. It is also more frequent in proportion as a part is exposed to pressure; hence the minute arteries and veins about a joint are distinguished for the multitude of their anastomosing branches; and above all, it is frequent in proportion to the importance of the organ; hence the most remarkable anastomosis in the body is in the brain. By this provision care is taken that no part be deprived of its supply of blood; for if one channel be blocked up, a hundred more are open to the current, and the transmission of it to any particular region or organ by two or more channels, instead of through one trunk, is a part of the same provision. Thus the fore-arm possesses four principal arteries with corresponding veins, and the brain receives its blood through four totally independent canals."

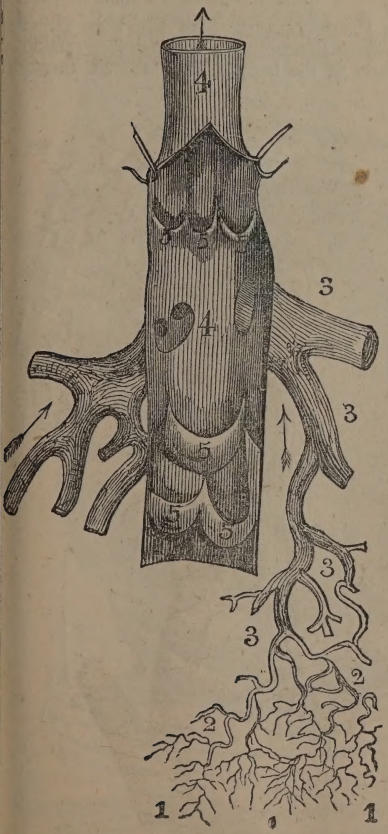
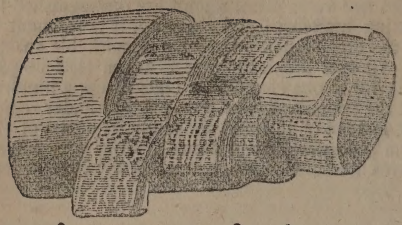


Fig. 120.

View of the manner in which the minute branches of the vein unite to form the larger branches and the trunks. 1, capillary venous branches; 2, small branches formed by the union of the capillary; 3, larger branches formed by the union of the smaller, and gradually increasing in size, to form the great trunk; 4, a portion of which is laid open to show its inner surface and the arrangement of, 5, the valves formed by its inner coat.

Fig. 118.



Portion of an artery, showing the several coats of which it is composed separated from each other. 1, the internal or serous coat; 2, the middle or fibrous coat; 3, the external or cellular coat.—*Dr. Smith.*

General Ramifications of the Blood-vessels.—As has been already observed, the arteries and veins distribute themselves in innumerable ramifications from the heart, through all parts of the body. They spread through the muscles, amid whose fibres they ramify; and penetrate the very bones, whose structure is filled with them. We have already given, in Fig. 314, a general view of the manner in which the arteries ramify; and the veins differ from the arrangement there represented only in this, that while the larger arteries are generally confined to certain depths within the surface, veins of large size ramify superficially also in immense numbers, so as to be rendered visible in various parts of the body as blue lines seen through the semi-transparent texture of the epidermis, or superficial skin.

It may be here stated that the skin, properly so called, is that covering having a

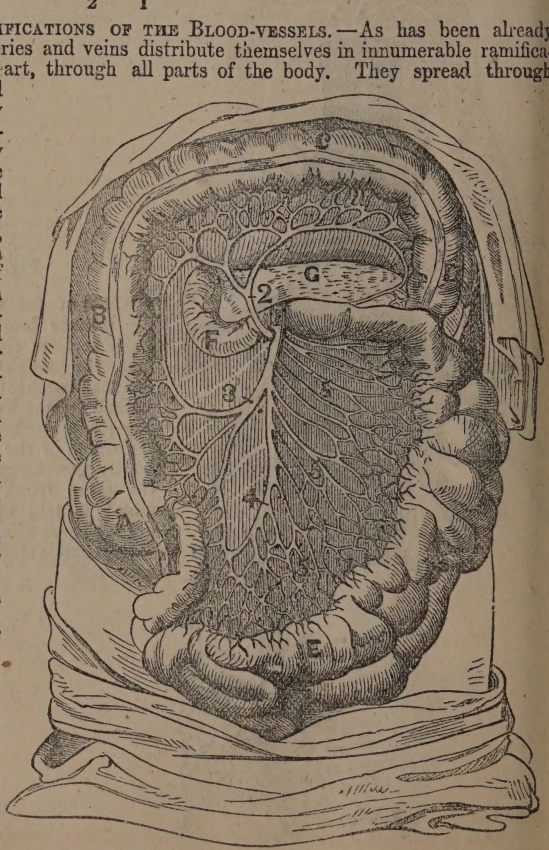
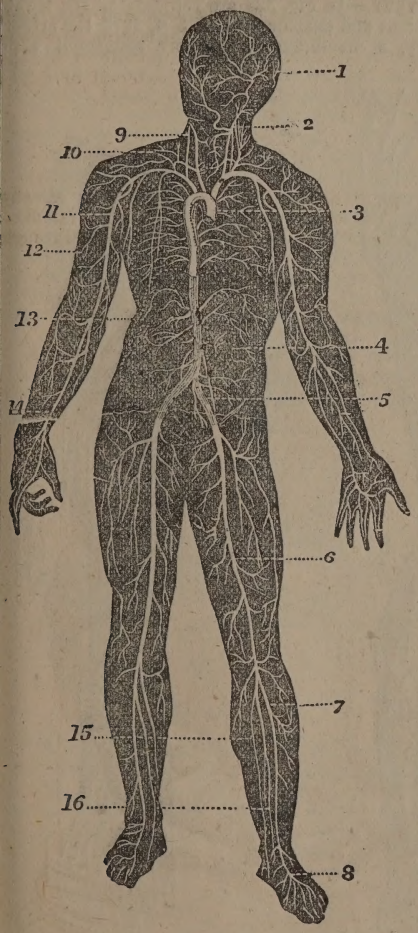


Fig. 328.—Blood-vessels of the Mesentery.

very sensible thickness, which is taken between the fingers when we pinch the surface of the body, as, for example, the back of the hand or the neck. This consists of two distinct parts; the inner and thicker part, called the true skin, *cutis* or *derma*, a Greek word signifying the skin; and the superficial or thinner part, called the *cuticle*, *epidermis*, or covering of the skin, from a Greek word ἐπί (*epi*), signifying *upon* or *over*. The membrane thus named is



The following is from Dr. Lardner's beautiful work, which should be in every library; it is very cheap, price 10s., with its 520 finely executed engravings.

Fig. 1, temporal artery; 2, carotid do.; 3, aorta do.; 4, renal do.; 5, iliac do.; 6, femoral do.; 7, anterior tibial do.; 8, tarsal do.; 9, vertebral do.; 10, subclavian do.; 11, axillary do.; 12, brachial do.; 13, cœliac do.; 14, radial do., 15, posterior tibial do.; 16; peroneal do.

General View of the Arterial System. — From the upper part of the crook of the aorta branches diverge, two of which, bending under the clavicles, descend along the arms, taking the name of the brachial arteries; and at the point where the aorta descends towards the navel, other branches diverge right and left, descending along the legs, where they take the name of femoral arteries. There are numerous other ramifications, as shown in the general illustration of the arterial system, where the names of the principal arteries are indicated. (*See Observations on the Circulation, page* 23 *of this book.*)

Fig. 315.—*Lardner.*

THEORETICAL DIAGRAM OF THE ARTERIAL OR PURE BLOOD CIRCULATION; THE VENOUS OR EXHAUSTED BLOOD RETURNS TO THE HEART BY ANOTHER SET OF VEINS.

that which is raised and separated from the derma by a blister. Although it would be impossible to give, in a work like the present, figures which would convey any notion of the local distribution of the blood-vessels through the body, other than the general representation of the arterial system given in Fig. 314, it may, nevertheless, be interesting to readers who are not professionally medical, to see the wonderful structure of the vascular system in some of the principal parts of the human economy.

BLOOD-VESSELS OF THE MESENTERY.—In Fig. 328 are represented the trunk (1) and the innumerable ramifications and anastomoses (2, 3, 4, 5) of the artery which spreads over the *mesentery*, a membranous structure connected with the intestines.

BLOOD-VESSELS OF THE LEG AND FOOT.

In like manner, in Fig. 332, are represented the principal arteries, and in Fig. 333 the principal veins, which ramify over the leg and foot.

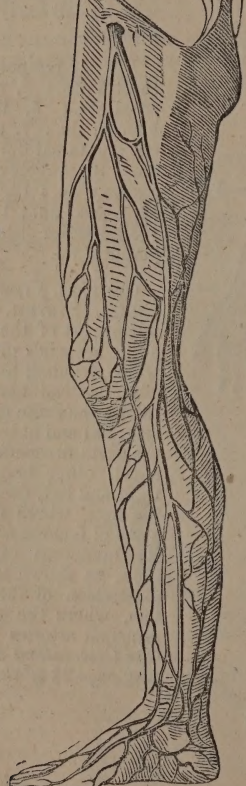


Fig. 332

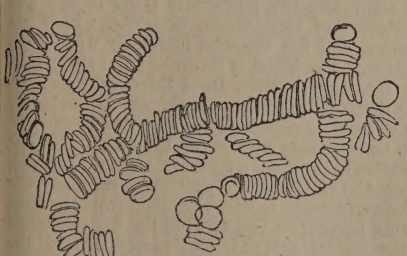
Fig. 333.

All the animal and saline matter held in solution in the serum being removed the fluid that remains is water, the proportion of which in 1000 parts varies from

853, the maximum, to 779, the minimum. The second constituent of the blood, the fibrin, is the most essential portion of it, being invariably present, whatever other constituents be absent. While circulating in the living vessel, fibrin is fluid and transparent; by the process of coagulation, it is converted into a solid and opaque substance of a yellowish white colour, consisting of stringy fibres, disposed in striæ, which occasionally form a complete network (Fig. 111). These fibres are exceedingly elastic. In their general aspect and their chemical relations they bear a close resemblance to pure muscular fibre, that is, to muscular fibre deprived of its enveloping membrane and of its colouring matter, and they form the basis of muscle. According to M. le Canu, the proportion of the fibrin varies from seven parts in 1000, the maximum, to one part in 1000, the minimum, the medium of twenty experiments being four parts in 1000.

The third constituent of the blood, the matter upon which its red colour depends, though, as has been stated, entirely absent in certain classes of animals, and in all animals in some parts of their body, seems to be essential, at least to the organic organs, whenever they perform their functions with a high degree of perfection. Thus in the lowest class of vertebrated animals, the fish, while the principal part of its body receives only a colourless fluid, its organic organs, as the heart, the gills, the liver, are provided with red blood. The red matter, wherever present, is invariably heavier than the fibrin, and consequently, during the process of coagulation, it gradually subsides to the lower surface, and is always found forming the bottom of the clot. Its proportion to the other constituents varies very remarkably, the maximum being 148, the minimum 68, and the medium 108, in 1000 parts of blood.

From Dr. Smith.—"The red particle of the human blood is circular. It is circular also in all animals belonging to the class mammalia; but in the three lower classes of vertebrated animals, the bird, the reptile, and the fish, it is elliptical.



Columnar arrangement which the particles of the human blood assume immediately after it is drawn from its vessel.

Fig. 113.

"When perfect and entire, the red particles indicate a disposition to arrange themselves in a definite mode. They combine spontaneously into columns of variable length. In order to observe this tendency, a small quantity of blood, the moment it is taken from its living vessel, should be placed between two strips of glass, or covered with a bit of talc, and placed under the microscope. When thus arranged, a considerable agitation at first takes place among the particles. As soon as this motion subsides, the particles apply themselves to each other by their broad surfaces, and thus form piles or columns of considerable length (Fig. 113). The columns often again combine one among another, the end of one being attached to the side of another, sometimes producing very curious ramifications (Fig. 113). In like manner, the elliptical particles apply themselves to each other by their broad surfaces, but they are not so exactly matched as the circular, one particle partially overlapping another, so that they form less regular columns than the circular.

"The red particles, as far as is known, constitute a distinct and peculiar form

of animal matter: the red colour, according to some, depending on an impregnation of iron; according to others, on an animal substance of a gelatinous nature. The exact proportion of the different substances contained in the blood, according to the most recent analysis of it, that by M. le Canu, is as follows, namely:—

Water	786·500	Chloruret of sodium and potassium, alkaline phosphate, sulphate, and subcarbonates	7·304
Albumen	69·415		
Fibrin	3·565		
Colouring matter	119·626		
Crystallizable fatty matter	4·300	Subcarbonate of lime and magnesia, phosphates of lime, magnesia and iron, peroxide of iron	1·414
Oily matter	2·270		
Extractive matter, soluble in alcohol and water	1·920		
Albumen combined with soda	2·010	Loss	2·586
			1000·000

"From the results of this analysis it is manifest that all the proximate principles of which the different tissues are composed exist in the blood, namely, albumen, the proximate principle forming the basis of membrane; fibrin, the proximate principle forming the basis of muscle; fatty matter, forming the basis of nerve and brain; and various saline and mineral substances, forming a large part of bone, and entering more or less into the composition of every fluid and solid."—*Dr. Smith.*

VEIN.—(*Dr. Hooper.*) *Vena.* A long membranous canal, which does not pulsate, and returns the blood from the arteries to the heart. All veins originate from the extremities of arteries, or, more properly speaking, from the capillary vessels which connect the arteries and veins, and terminate in the auricles of the heart; *e. g.* the venæ cavæ in the right, and the pulmonary veins in the left auricle. They are composed, like arteries, of three tunics or coats, which are much more slender than in the arteries, and are supplied internally with semilunar membranes, or folds, called valves. The blood is returned from every part of the body, except the lungs, into the right auricle, from three sources:—1. The *vena cava superior*, which brings it from the head, neck, thorax, and superior extremities. 2. The *vena cava inferior*, from the abdomen and inferior extremities. 3. The *coronary vein* receives it from the coronary arteries of the heart. 1. The *vena cava superior*. This vein terminates in the superior part of the right auricle, into which it evacuates the blood from the *right* and *left subclavian vein*, and the *vena azygos*. The right and left subclavian veins receive the blood from the head and upper extremities, in the following manner:—The veins of the fingers, called *digitals*, receive the blood from the digital arteries, and empty it into the *cephalic of the thumb*, which runs on the back of the hand along the thumb, and evacuates itself into the external radial. The *salvatella*, which runs along the little finger, unites with the former, and empties its blood into the internal and external cubital veins. At the end of the fore-arm are three veins, called the great cephalic, the basilic, and the median. The *great cephalic* runs along the superior part of the fore-arm, and receives the blood from the external radial. The *basilic* ascends on the under side, and receives the blood from the *external* and *internal cubital veins*, and some branches which accompany the brachial artery, called *venæ satellites*. The *median* is situated in the middle of the fore-arm, and arises from the union of several branches. These three veins all unite above the bend of the arm, and form the *brachial vein*, which receives all their blood, and is continued into the axilla, where it is called the *axillary vein*. This receives also the blood from the scapula, and superior and inferior parts of the chest, by the *superior* and *inferior thoracic vein*, the *vena muscularis*, and the *scapularis*. The axillary vein then passes under the clavicle, where it is called the *subclavian*, which unites with the external and internal jugular veins and the

vertebral vein, which brings the blood from the vertebral sinuses; it receives also the blood from the *mediastinal*, *pericardiac*, *diaphragmatic*, *thymic*, *internal mammary*, and *laryngeal veins*, and then unites with its fellow, to form the vena cava superior, or, as it is sometimes called, *vena cava descendens*. The blood from the external and internal parts of the head and face is returned, in the following manner, into the external and internal jugulars, which terminate in the subclavians:—The *frontal*, *angular*, *temporal*, *auricular*, *sublingual*, and *occipital* veins receive the blood from the parts after which they are named; these all converge to each side of the neck, and form a trunk called the *external jugular vein*. The blood from the brain, cerebellum, medulla oblongata, and membranes of these parts, is received into the lateral sinuses, or veins of the dura mater, one of which empties its blood through the foramen lacerum in basii cranii on each side into the *internal jugular*, which descends in the neck by the carotid arteries, receives the blood from the *thyroideal* and *internal maxillary veins*, and empties itself into the subclavians within the thorax. The vena azygos receives the blood from the *bronchial*, *superior*, *œsophageal*, *vertebral*, and *intercostal veins*, and empties it into the superior cava. 2. *Vena cava inferior*. The vena cava inferior is the trunk of all the abdominal veins, and those of the lower extremities, from which parts the blood is returned in the following manner. The veins of the toes, called the *digital veins*, receive the blood from the digital arteries, and form on the back of the foot three branches, one on the great toe, called the *cephalic*, another which runs along the little toe, called the *vena saphena*, and a third on the back of the foot, *vena dorsalis pedis;* and those on the sole of the foot evacuate themselves into the *plantar veins*.

The three veins on the upper part of the foot, coming together above the ankle, form the *anterior tibial;* and the plantar veins, with a branch from the calf of the leg, called the *sural vein*, form the *posterior tibial;* a branch also ascends in the direction of the fibula, called the *peroneal vein*. These three branches unite before the ham into one branch, the *subpopliteal vein*, which ascends through the ham, carrying all the blood from the foot: it then proceeds upon the anterior part of the thigh, where it is termed the *crural* or *femoral vein*, receives several muscular branches, and passes under Poupart's ligament into the cavity of the pelvis, where it is called the *external iliac*. The arteries which are distributed about the pelvis evacuate their blood into the *external hæmorrhoidal veins*. the *hypogastric veins*, the *internal pudendal*, the *vena magna ipsius penis*, and *obturatory veins*, all of which unite in the pelvis, and form the *internal iliac vein*. The external iliac vein receives the blood from the external pudendal veins, and then unites with the internal iliac at the last vertebra of the loins, forming the *common iliac;* the two common iliacs then form the *vena cava inferior*, or *ascendens*, which ascends on the right side of the spine, receiving the blood from the *sacral*, *lumbar*, *emulgent*, *right spermatic veins*, and the *vena cava hepatica;* and, having arrived at the diaphragm, it passes through the right foramen, and enters the right auricle of the heart, into which it evacuates all the blood from the abdominal viscera and lower extremities.

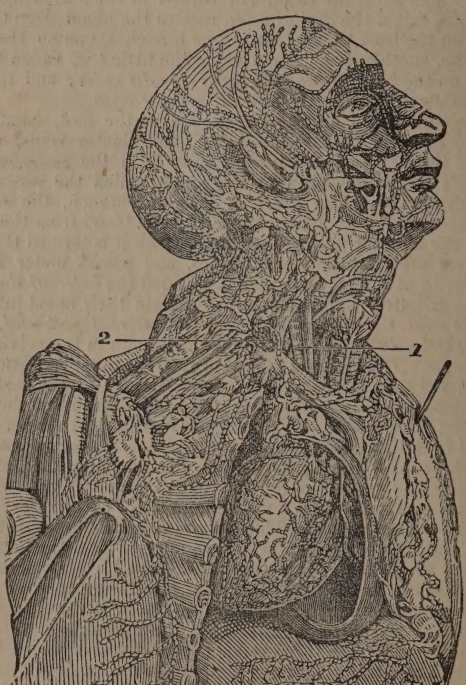
Vena cava hepatica.—This vein ramifies in the substance of the liver, and brings the blood into the vena cava inferior from the branches of the *vena portæ*, a great vein which carries the blood from the abdominal viscera into the substance of the liver. The trunk of the vena portæ, about the fissure of the liver, in which it is situated, is *divided* into the hepatic and abdominal portions. The *abdominal portion* is composed of the *splenic*, *meseraic*, and *internal hæmorrhoidal veins*. These three venous branches carry all the blood from the stomach, spleen, pancreas, omentum, mesentery, gall-bladder, and the small and large intestines, into the *sinus* of the vena portæ. The *hepatic portion* of the vena portæ enters the substance of the liver, divides into innumerable ramifications which secrete the bile, and the superfluous blood passes into corresponding branches of the *vena cava hepatica*.

The *action of the veins*.—Veins do not pulsate: the blood which they receive

from the arteries flows through them very slowly, and is conveyed to the right auricle of the heart, by the contractility of their coats, the pressure of the blood from the arteries, called the *vis à tergo*, the contraction of the muscles, and respiration; and it is prevented from going backwards in the vein by the valves, of which there are a great number.

Pulse. *Pulsus.* The beating of the heart and arteries.—The pulse affords most important indications in the diagnosis, prognosis, and treatment of disease. It is usually felt by pressing the radial artery at the wrist; and some skill and experience are requisite in the application of the fingers, in order to derive all the information which the pulse is capable of affording. In the healthy subject, the pulse is very various in force and frequency, according to the constitution of the individual; it also differs greatly at different periods of life, in a general way diminishing in frequency from infancy to old age. The pulse is generally more frequent in women, and persons of an irritable temperament, than in males and those who have less mobility of system. The following is the usual number of pulsations in a minute at different periods of life:—one year, 120 to 130; five or six years, 100 to 106; seven years, 90 to 95; puberty, 80; adult age, 65 to 75; sixty years, 60; old age, 50.

Sources of Lymph. —The liquid part of the blood, called the *liquor sanguinis*, or *plasma*, charged with nutritive principles, exudes by the process of exosmose through the coats of the capillaries, and being diffused among the tissues, supplies to them respectively the matters proper for their repair. The residuum of the plasma is absorbed by the multitude of lymphatics which pass through the same parts, into which it enters by the process of endosmose. In this state it constitutes lymph, and is carried back by the lymphatic vessels to the subclavian veins. — *Dr. Lardner.*



LYMPHATICS OF THE UPPER PART OF THE TRUNK AND HEAD.

Structure of the Lymphatic Glands.—It was formerly supposed that in passing through the glands, the lymphatics entered into direct communication with the blood-vessels. The researches of modern physiologists have proved this

to be an error. A lymphatic gland consists of a mass of minute lymphatic vessels, among which numerous sanguiferous capillaries (blood-vessels) ramify. Between the two sets of vessels there is no inosculation. They conduct their respective fluids altogether independently of each other. The lymph which passes into the gland by the afferent vessels, passes out of it by the efferent ones, having in the gland been infinitely subdivided by the minute and multiplied tubes which form the substance of the gland. Whether there is any interchange between the blood of the capillaries in the gland by exudation or exosmose and the lymph of the smaller lymphatic vessels, is mere matter of conjecture, unsupported as yet by any results of immediate observation.

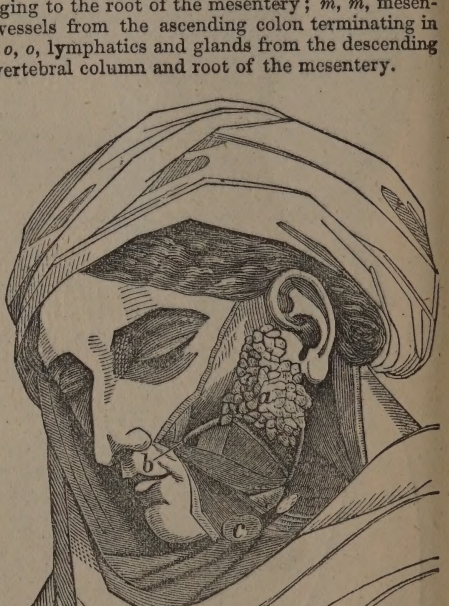
ABSORBENTS AND LYMPHATICS. (*From Quain and Wilson.*)

Nos. 1, 1, the under surface of the liver; 2, the gall-bladder; 3, the ductus communis choledochus; 4, the portal vein; 5, the hepatic artery; 6, the

descending portion of the duodenum; 7, the pancreas; 8, the lower part of the spleen projecting below the great end of the stomach; 9, the stomach; 10, the superior mesenteric artery and vein resting upon the transverse portion of the duodenum; 11, the ascending colon; 12, the mesentery; 13, the small intestines; 14, the layer of peritoneum which connects the descending colon to the posterior wall of the abdomen; 15, the descending colon; 16, the sigmoid flexure; 17, the rectum.

a, a group of lymphatics from the right lobe of the liver, passing to its posterior border to terminate in the commencement of the thoracic duct; *b*, *b*, a second group from the gall-bladder and middle portion of the liver, proceeding along the course of the hepatic vessels between the layers of the lesser omentum; *c*, one or two lymphatic trunks passing to the upper surface of the liver; *d*, *d*, lymphatics from the left lobe passing to the coronary glands, *e*, *e*; *f*, *f*, lymphatics from the stomach converging to the group of glands, *g*, *g*, placed along the concave border of the organ; *h*, *h*, lymphatics converging to the glands on convex border of the stomach; *i*, lymphatics from the great end of the stomach descending to the splenic glands; *k*, *k*, pancreatic lymphatic vessels; *l*, *l*, lacteal vessels originating upon the surface of the small intestine, and converging to the root of the mesentery; *m*, *m*, mesenteric glands; *n*, *n*, lymphatic vessels from the ascending colon terminating in glands along its fixed border; *o*, *o*, lymphatics and glands from the descending colon converging towards the vertebral column and root of the mesentery.

FORMATION OF SALIVA FOR THE MOUTH.—In the oral cavity, on each side, near the second double tooth in the upper jaw, the mucous membrane forms a little tube (*b*), which ascends along the cheek, and branches out and forms a gland in front of the lower part of the ear (*a*). Another smaller one of these glands lies just within the lower edge of the under jaw, on each side (*c*); and a third and still smaller pair lie under the roots of the tongue, uniting on the middle line. The ducts of these last two pairs open into the mouth in front of the roots of the tongue and near its bridle. These are called the salivary glands. They secrete the saliva or the solvent fluid of the mouth, and pour it into the oral cavity freely during the process of mastication, and whenever any exciting substance is taken into the mouth. The smell, and sight, and even the thoughts of savory or disgusting substances, and of other objects of desire, will also cause an increased secretion and flow of saliva.—*Graham.*



a, the salivary gland in the cheek; *b*, the duct leading to the mouth; *c*, the gland under the edge of the under jaw.

The following is also from Lardner's Animal Physics:—*Beautiful Structure of the Lymphatics.*—There is no part of the organization the structure of which presents a spectacle more curious and beautiful than the lymphatics. We shall, therefore, give here some examples of their structure. In Fig. 347 are shown the

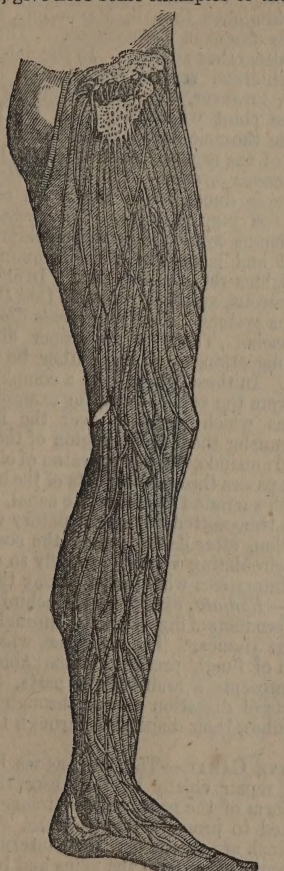


Fig. 350.
LYMPHATICS OF THE LEG AND FOOT (Mascagni).

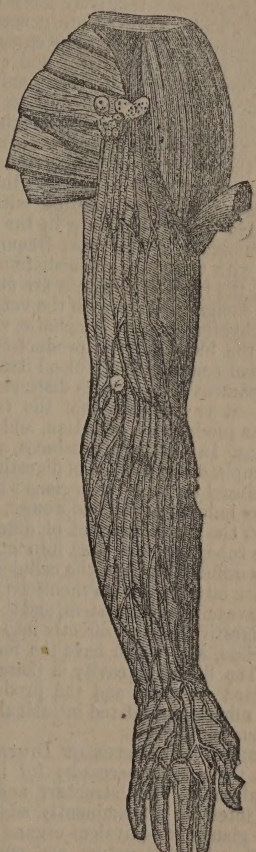


Fig. 349.
LYMPHATICS OF THE ARM AND HAND (Mascagni).

chyliferous vessels of the *mesentery*. These are spread over the intestines on the side, whence they absorb the chyle, and, passing over the mesentery, are transmitted through a multitude of glands from which larger vessels issue, which eventually terminate in the thoracic duct.

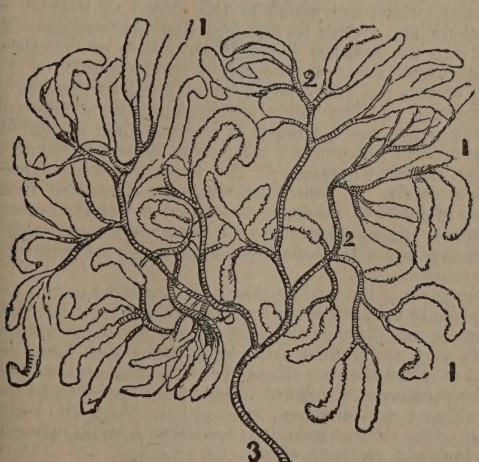
The Lymphatics of all Vertebrate Animals of the inferior classes are similar to those of man. In the case of certain reptiles—the frog, for example—their

structure is often more complicated than in warm-blooded animals. In the course of the lymphatic vessels of these are found certain enlargements, provided with muscular fibres, which have been called *lymphatic hearts*, whose contraction produces the same effects in propelling the lymph as the heat produces upon the circulation of the blood. In both reptiles and fishes the lymphatic vessels are relatively more voluminous than in Mammifers or birds. Lymphatic glands, however, are generally absent in these classes. The valves are less numerous, and in some cases altogether absent. In the larger class of Mammifers, the lymphatic and chyliferous vessels converge in a single thoracic duct, as in man. Frequently, however, this canal consists of two ducts, which remain separate up to the point where they enter the left subclavian vein. In other cases, although the thoracic duct is double in its pectoral part, and as far as the commencement of the cervical part, the two branches unite at the moment of joining the venous system.—*The Lymphatic Vessels of Birds* form by their union two thoracic ducts, which appear on each side of the base of the neck, uniting with the jugular veins.—*The Lymphatics of Reptiles and Fishes* terminate in the venous system by communications more or less numerous. The most frequent and largest of these communications are made with veins in the immediate neighbourhood of the head. In mammifers generally, the lymphatic glands are numerous, and it is probable that they have no direct communication with the venous system. *The Invertebrate Classes* have neither chyliferous nor lymphatic vessels. There is no proper distinction between the blood and the product of digestion, or it may rather be said that this product constitutes the blood itself. In those which have a complete circulating apparatus with arteries distinct from the veins—such, for example, as the mollusca—it is probable that the veins which circulate over the intestines absorb the products of digestion, and transfer them to the region of the respiratory organs. In arachnida, crustacea, and annelida, whose apparatus of circulation is less complete, the product of digestion passes through the coats of the intestines, and is diffused through the regions which surround the digestive canal, and from thence, by imbibition and endosmose, is transmitted to the circulatory vessels.—*In Insects* the liquid product of digestion, after it has passed the coats of the digestive tube, does not pass into any circulating vessels properly so called; it is merely diffused through the cellular interstices which exist among the organs, and thence into the organs themselves.—*Radiata*, expecting the echini and holothuria, have no vascular system, and the products of digestion pass through the sides of the digestive cavities directly into the tissues. The acalephæ, which belong to this class, and which have the form of fungi, present a remarkable arrangement. The digestive cavity in these presents a multitude of parts, forming a complicated network, and the products of digestion escape through the sides of these minute reticulated intestinal tubes, their dispersion through the system being thus facilitated.

Absorbing Apparatus of Digestive Canal.—The body, as we have seen, receives the matter necessary for its repair chiefly by the absorption of the intestinal canal. The structure and form of the coats of the stomach and the smaller intestine are eminently adapted to promote this purpose. The innumerable glands or equivalent organs which are spread over their internal surface, penetrating their structure, and communicating with the veins and lymphatics, have been already explained. Their form is not less adapted to promote this absorption. The internal surface of the stomach of an adult person measures about 100 square inches; and, taking the average diameter of the small intestine at an inch and a quarter, and its length at twenty feet, the magnitude of its internal surface will be, in round numbers, 1000 square inches, or something more than six square feet. This vast surface, combined with its peculiar structure, will easily explain the celerity with which liquid matter flowing from the stomach through the intestine is transported through the circulation.—*Lardner.*

THE ABSORBING VESSELS, considered as a system or whole, are divisible into two sets: 1, those which return the chyle from the alimentary canal; and 2, those which take up the lymph or residue of nutrition from all the other parts of the body: both are connected in their course with ganglia or glands. The chyle vessels, by their union, form a large trunk (thoracic duct), which is a common reservoir for receiving their contents, as well as those of the lymphatics, which come from both the lower extremities,—from the cavity of the abdomen and its viscera, except the right lobe of the liver,—from the walls of the abdomen at both sides, and from the surface of the left side of the thorax,—from the left lung, the left side of the heart, and left side of the diaphragm,—from the left upper extremity, and from the corresponding side of the head and neck. But the lymphatic vessels, which arise from the right upper extremity, the right side of the head and neck, from the right lung, and from the corresponding half of the liver and diaphragm, pour their contents, by a short trunk, into the conflux of the right subclavian and internal jugular veins. This vessel may be called the right lymphatic duct; it is commonly named the right thoracic duct, though no part of it lies within that cavity. The duct of the left side is not entirely thoracic; for its commencement is in the abdomen, and its termination in the neck.

Dr. Smith on the Secretory Organs.—In the construction of the secreting apparatus, membrane, then, may be said to be disposed into four elementary forms, constituting cryptæ or vesicles, follicles, cæca, and tubuli. Membrane, disposed into these elementary forms, constitutes the simple bodies by the accumulation and the varied arrangement of which the compound organs are composed. There is no other known element which enters into the composition of the most complex secreting organ.



Branched cæca, showing—1, the cæca, terminating in, 2, excretory ducts which unite to form, 3, a common trunk.

The basis of the secreting canals consists, then, of membrane disposed in one or other of the elementary forms. These secreting canals constitute a peculiar system of organs wholly different from all the other organs of the body. The form of these organs, their structure, and their relation to the blood-vessels and nerves, have formed subjects of laborious investigation and of keen controversy during several centuries. The honour of discovering the exact truth on these points is due to very recent researches. Malpighi, an Italian, who flourished at

Bologna in the middle of the seventeenth century, was the first to establish a special inquiry into the intimate structure of the secreting apparatus. After many years of laborious examination, he arrived at the conclusion that a minute sac or follicle is invariably interposed between the termination of the capillary artery and the commencement of the excretory duct. According to him, the capillary artery conveys the blood to the follicle, separates from the blood the substance secreted; and the excretory duct arising from one extremity of the follicle conveys the secreted fluid, when duly prepared, to its destined situation. By injection, by dissection, by the microscope, by experiment on living animals, and by the phenomena of disease, he conceived that he had demonstrated that this is the true structure of the secreting apparatus in its most complex form. This view was generally acquiesced in by his contemporaries and by succeeding anatomists and physiologists; and in the time when Ruysh wrote was the received opinion.

Since every secreting organ is copiously supplied with blood, it follows that a great part of the blood of the body is always circulating in secreting organs; and, indeed, it is to afford materials for the action of these organs that the blood itself is formed. How do these organs act upon the blood? All that is known of the course of that portion of the blood which flows through an organ of secretion is, that it passes into arteries of extreme minuteness, which are spread out upon the external walls of the elementary secreting bodies, and which, as far as they can be traced, pass into capillary veins,—nowhere terminating by open mouths,—nowhere presenting visible outlets or pores; their contents probably transuding through their thin and tender coats by the process of endosmose. As it is flowing through these capillary arteries, the blood undergoes the transformations effected by secretion, forming,—1. The fluids, which are added to the aliment, and which accomplish its solution, and change it into chyme. 2. The fluids, which are added to the chyme to convert it into chyle, and both to chyle and lymph, to assist in their assimilation. 3. The fluids which, poured into the cavities, facilitate automatic or voluntary movements. 4. The fluids which serve as the media to the organs of the senses, by which external objects are conveyed to the sentient extremities of the nerves for their excitement. 5. The fluids which, deposited at different points of the cellular tissue, when more aliment is received than is needed, serve as reservoirs of nutriment to be absorbed when more aliment is required than can be afforded by the digestive organs. 6. The fluids which are subsequently to be converted into solids. 7. The fluids which are eliminated from the common mass, whether of fluids or solids, to be carried out of the system as excrementitious substances. 8. In addition to all these substances, which are indispensable to the preservation of the individual, those which are necessary to the perpetuation of the species.

In order to form any conception of the mode in which the secreting organs act upon the blood, so as to elaborate from it such diversified substances, it is necessary to consider the chemical composition of the different products of secretion, and the degrees in which they really differ from each other, and form the common mass of blood out of which they are eliminated. By chemical analysis, it is established that all the substances which are formed from the blood by the process of secretion are either water, albumen, mucus, jelly, fibrin, oil, resin, or salts; and, consequently, that all the secretions are either aqueous, albuminous, mucous, gelatinous, fibrinous, resinous, oleaginous, or saline.

1. Aqueous Secretions.—From the entire surface of the skin, and also from that of the lungs, there is constantly poured a quantity of water, derived from the blood, mixed with some animal matters, which, however, are so minute in quantity, that they do not communicate to the aqueous fluid any specific character.

2. Albuminous Secretions. — All the close cavities, as the thorax, the abdomen, the pericardium, the ventricles of the brain, and even the interstices

of the cellular tissue, are constantly moistened by a fluid which is termed serous, because it is derived from the serum of the blood. This serous fluid consists of albumen in a fluid form, and it differs from the serum of the blood chiefly in containing in equal volumes a smaller proportion of albumen. Membranes of all kinds consist essentially of coagulated albumen: and the albumen, as constituting these tissues, differs from albumen as existing in the serum of the blood only in being unmixed with extraneous matter, and in being in a solid form.

3. Mucous Secretions.—As all the close cavities, or those which are protected from the external air, are moistened with a serous fluid, so all the surfaces which are exposed to the external air, as the mouth, the nostrils, the air-passages, and the whole extent of the alimentary canal, are moistened with a mucous fluid. Mucus does not exist already formed in the blood: it is always the product of a gland. Some of the mucous glands are among the most elaborate of the body; still the main action of the gland seems to be to coagulate the albumen of the blood; for the basis of mucus is coagulated albumen. The fluid that lubricates the mucous surfaces in their whole extent, the saliva, the gastric juice, the tears, the essential part of the fluid formed in the testes and in the ovaria, are mucous secretions. Hence the most complex and elaborate functions of the body, respiration, digestion, reproduction, are intimately connected with the mucous secretions: nevertheless, as far as regards their chemical nature, the mucous differ but slightly from the albuminous secretions; and it is probable that a slight change in the secreting organ is sufficient to convert the one into the other. By the irritation of mercury on the salivary glands, the saliva, properly of a mucous, is sometimes converted into a substance of an albuminous nature; and irritation in some of the serous membranes occasionally causes them to secrete a mucous fluid.

4. Gelatinous Secretions.—The proximate principle termed jelly abounds plentifully in several of the solids of the body, and more especially in the skin; but jelly does not exist already formed in the blood. Yet it is not the product of a gland, neither is there any known organ by which it is formed. Out of the body albumen is capable of being converted in jelly by digestion in dilute nitric acid: this conversion is probably effected by the addition of a portion of oxygen to the albumen. Albumen contains more carbon and less oxygen than jelly; the proportions of hydrogen and nitrogen in both being nearly the same. According to MM. Gay Lussac and Thénard, the elements of albumen and jelly are,

	Carbon.	Oxygen.	Hydrogen.	Nitrogen.
Albumen . .	52.883	23.872	7.54	15.765
Jelly . . .	47.881	27.207	7.914	16.988

The conversion of albumen into jelly is incessantly going on in the system; and the process accomplishes most extended and important uses. In the lungs at the moment of inspiration, oxygen enters into the blood in a state of loose combination; but in the system, at every point where the conversion of albumen into jelly takes place, oxygen probably enters into a state of chemical combination with albumen; and the new proximate principle, jelly, is the result. The agent by which this conversion is effected appears to be the capillary artery; the primary object of the action is the production of a material necessary for the formation of the tissues of which jelly constitutes the basis, as the skin; but a secondary and most important object is the production of animal heat; the carbon that furnishes one material of the fire being given off by the albumen at the moment of its transition into jelly; and the oxygen that furnishes the other material of the fire being afforded to the blood at the moment of inspiration. This view affords a beautiful exposition of the reason why jelly forms so large a constituent of the skin in all animals. The great combustion of oxygen and carbon, the main fire that supports the temperature of the body, is placed where it is most needed, at the external surface.

5. Fibrinous Secretions.—The pure muscular fibre, or the basis of the

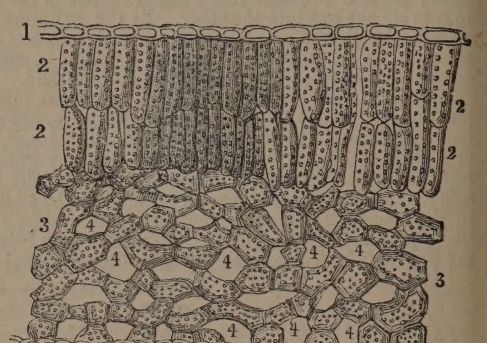
flesh, is identical with the fibrin of the blood. It contains a larger proportion of nitrogen, the peculiar animal principle, and is consequently more highly animalized, than the preceding substances. It appears to be simply discharged from the circulating blood by the capillary arteries, and deposited in its appropriate situation; no material change in its constitution being, it would seem, necessary to fit it for its office.

A third most important agent in the process of secretion is some influence derived from the nervous system.

1. It is proved, by direct experiment, that the destruction of the nervous apparatus, or of any considerable portion of it, stops the process of secretion. By experiments performed by Mr. Brodie, it is ascertained that the secretion of the urine is suspended by the removal or destruction of the brain, though the circulation be maintained in its full vigour by artificial respiration.

2. The section, and still more the removal, of a portion of the sentient nerves of the stomach (the par vagum, or eighth pair), according to some experimentalists, deranges and impedes—according to others, totally arrests—the process of digestion.

The following vertical section of a leaf, from Dr. Smith, shows how the principles of cellular structure and absorbents are carried out in the vegetable creation, on the same principle as in animated beings.

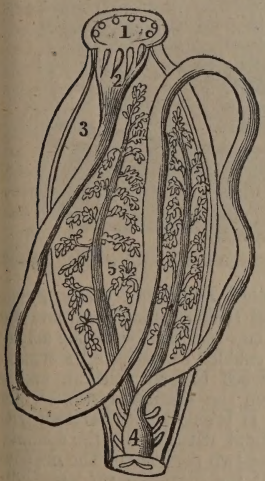


Vertical section of the leaf as it appears when seen highly magnified under the microscope. 1. Cells of the cuticle filled with air. 2. Double series of cylindrical cells occupying the upper surface of the leaf, filled with organic particles. 3. Irregular cells forming a reticulated texture occupying the under surface of the leaf. 4. Interspaces between the cells, termed the intercellular passages or air-chambers.

"Whatever the medium breathed, the organic tissue which constitutes the essential part of the immediate organ of respiration is the skin. The primary tissue of which the skin is composed is the cellular, which, organised into mucous membrane, forms the essential constituent of the skin. In all animals, from the monad to man, *the skin covers both the external and the internal surfaces of the body. When forming the external envelope, this organ commonly retains the name of skin; when forming the internal lining, it is generally called mucous membrane;* and in all animals, either in the form of an external envelope or an internal lining, or by both in conjunction, or by some localization and modification of both, the skin constitutes the immediate organ of respiration. In different classes of animals it is variously arranged, assumes various forms, and is placed in various situations, according to the medium breathed, and the facility of bringing its entire surface into contact with the surrounding element; but in all, the organ and its office are the same: it is the modification only—that modification being invariably and strictly adaptation—which constitutes the whole diversity of the immediate organ of respiration."

The following observations and cut are from Dr. Smith, showing a specimen of the lowest scale of animated beings:—

"At the commencement of the animal scale, in the countless tribes of the polygastrica, respiration is effected through the delicate membrane which envelops the soft substance of which their body is composed. The air contained in the water in which they live, penetrating the porous external envelope, permeates every part of their body; aërates their nutritive juices; and converts them immediately into the very substance of their body. They are not yet covered with solid shells nor with dense impervious scales, nor with any hard material which would exclude the general respiratory influence of water, or render necessary any special expedient to bring their respiratory surface into contact with the element. But in some tribes even of these simple creatures there is visible by the microscope an afflux of their nutritive juices to the delicate pellicle that envelops them, in the form of a vascular network, in which there appears to be a motion of fluids, probably the nutritive juices flowing in the only position of the body in which they could come into direct contact with the surrounding element. In some more highly advanced tribes, as in wheel-animalcules, there is an obvious circulating system in vessels near the surface of the skin. In other tribes, the internal surface constituting the alimentary canal is of great extent and width, and forms numerous cavities which are often distended with water. In this manner a portion of the internal as well as the external surface is made contributary to the function of respiration, and this extended respiration is conducive to their great and continued activity, to their rapid development, and to the extraordinary fertility of their races.



Holothuria. 1. Mouth. 2. Salivary sacs. 3. Intestine. 4 Cloaca. 5. Ramified tubes, conveying water for respiration into the interior of the body."

GANGLIONIC NERVOUS SYSTEM, OR NERVES OF NUTRITION.—I only give one engraving of this system; they, however, are easily comprehended from the other engravings of nerves, and only differ in appearance by being mostly ganglionic or knotted in groups. They have no common centre, but spread over the entire body wherever nutrition is required, and that of course is in every large or minute part of the frame. Lardner, in his Animal Physics, has some beautiful cuts of this system of nerves, one large cut showing the ganglionic nerves of the

whole body. The reader is referred to my notice of this fourth order of nerves at pages 24, 25.

"The organic nerves are spread out in countless numbers upon the grea

1. Under surface of the liver, turned up, to bring into view the anterior surface of the stomach. 2. Gall-bladder. 3. Organic nerves enveloping the trunks of the blood-vessels. 4. Pyloric extremity of the stomach and commencement of the duodenum. 5. Contracted portion of the pylorus. 6. Situation of the hour-glass contraction of the stomach, here imperfectly represented. 7. Omentum. The electricity or vital power in the nerves, 3 3, cause the chemical change of food in the stomach, and is the first commencement of action in digestion.

VIEW OF THE ORGANIC NERVES OF THE STOMACH.—*Dr. Smith.*

trunks of the arteries, so as to give them a complete envelope; these nerves, never quitting the arteries, accompany them in all their ramifications, and the fibril of the nerve is ultimately lost upon the capillary termination of the artery. It is by these organic nerves that the stomach is enabled to perform its organic functions, which, for the reason assigned, is placed beyond volition, and is without consciousness. By the nerves derived from the sentient system, which mingle with the organic, the function of nutrition is brought into relation with the percipient mind, and is made part of our sentient nature. By the commixture of these two sets of nerves, derived from these two portions of the nervous system, though we have no *direct* consciousness of the digestive process—consciousness ceasing precisely at the point where the agency of volition stops—yet pleasurable sensation results from the due performance of the function. Hence the feeling of buoyancy, exhilaration, and vigour, the pleasurable consciousness to which we give the name of health, when the action of the stomach is sound: hence the depression, listlessness, and debility, the painful consciousness which we call disease, when the action of the stomach is unsound: hence, too, the influence of the mental state over the organic process; the rapidity

and perfection with which the stomach works when the mind is happy—when the repast is but the occasion and accompaniment of the feast of reason and the flow of soul, the slowness and imperfection with which the stomach works when the mind is harassed with care, struggling against adverse events, or is in sorrow and without hope, when the friend that sat by our side, and with whom we were wont to take sweet counsel, is gone, and therefore gone that which made it life to live.

"Renovation is the primary and essential office of the stomach, and its organic nerves enable it to supply the ever-recurring wants of the system. Gratification of appetite is a secondary and subordinate office of the stomach, and its sentient nerves enable it to produce the state of pleasurable consciousness when its organic function is duly performed. By the double office thus assigned it, the stomach is rendered what Mr. Hunter named it, the centre of sympathies."—*Dr. Smith.*

"THE MUSCLES OF THE BODY are the agents by which its different efforts and movements are performed. In ordinary language they are known by the name of flesh. Flesh is muscle. A muscle is a compound structure, made up of cellular tissue for its basis, which encloses it in its areole fibrine as the essential constituent. Tendinous fibres are superadded in most muscles, particularly at their extremities, forming the means of attachment to the perisotum and the bones. When we look at a muscle dissected, it evidently appears made up of fibres arranged in a defined direction; several of these are observed to be aggregated into bundles, each of which is detached from the rest by a thin lamilla of delicate cellular tissue. Each bundle again admits of being separated into fibre, and these into fabrilla; and the separation may be continued until we at length arrive at some so minute as to be incapable of further division. The muscles thus formed of bundles or groups of fibres, either singly or in various combinations, draw upon the different parts of the skeleton to which they are attached, and put them in motion or steady and fix them as circumstances require. The skeleton of man contains more than two hundred separate pieces, and the muscles about two hundred and twenty pairs."—*Quain and Wilson.*

MUSCLES. (*Lardner.*)—The apparatus by which the bones are held together being described, it remains to show how those movements of which they are severally susceptible are imparted to them. The bones themselves are merely passive instruments: and the ligaments by which they are connected, the forms given to them at the joints, the cartilaginous coatings, and synovial apparatus, are provided respectively for facilitating, but not at all for originating, their motions. The apparatus by which the motions are immediately produced are fibrous bands and masses of flesh called *muscles*, which constitute that part of the animal body which when used for human food is called *meat*. With the visible fibrous structure of the muscular tissue every one must be familiar. *Muscles* consist of fibres ranged generally side by side, parallel to each other. They are extended between the bones, to one or both of which they are intended to impart motion; or, as in the face and eye, one end only is attached to bone. The muscle itself, however, is not immediately connected with the bone. At its extremities it gradually takes the form of tendinous fibres, totally different in their physical character from the fibres of the muscle itself.

"TENDONS.—These tendinous fibres are sometimes collected into a single cord called a *tendon*, which is inserted in the bone so firmly that before it can be detached from it the bone itself would be broken."—*Lardner.*

MUSCULAR FORCE.—Anatomists and physiologists have not determined with certainty the mechanical change by which muscular contraction is produced. When the muscular tissue is submitted to a microscope of moderate magnifying power, one, for example, of five or six times the linear dimensions, each fibre is found to consist of a number of fasciculi, each similar to the original fibre.

The contractile power of the muscles which have been described can, in general, only be called into action by the dictate of the will. Hence they are called *voluntary muscles*, and examples of them are presented by the muscles

which impart motion to the principal members of the body. Thus, the muscles by which the legs or arms are moved can only be brought into play by the

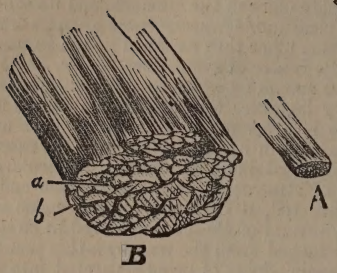


Fig. 1.

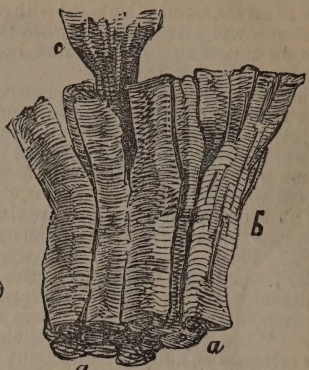
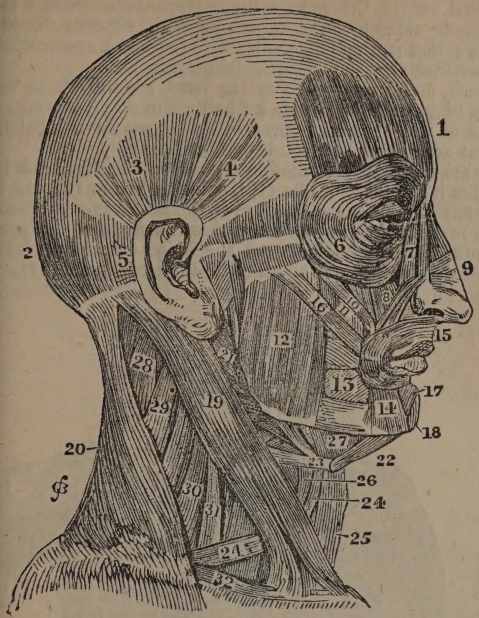


Fig. 2.

In Fig. 1, A represents a small portion of a muscle in its natural size, cut transversely at its extremity. B represents the same object magnified five times in its linear dimensions, the component fibres of which it consists being rendered apparent. Fig. 2 represents a part of a muscle submitted to a much higher magnifying power, in which the structure of each separate fibre is shown as marked by a series of transverse striæ. The terminal section is shown at *a a*, the transverse striæ at *b b*, and a single fibre split into its component fibrillæ at *c*.

operation of the will. There are some muscles which are, to a certain extent, subject to the will, but also act independently of it. The muscles which move the chest in respiration present examples of this class. The will has the power of accelerating, retarding, or even of temporarily suspending the act of respiration; but when the will exercises no influence on the organs of respiration, as when the mind is engaged in other objects, or in sleep, the process of respiration goes on with perfect regularity.

Involuntary Muscles.—There are some muscles over which the will has no control whatever, and which are hence called *involuntary muscles*. The heart, and the muscles entering into the structure of the stomach and intestines, are examples of this class. Except the heart, they do not present striæ. The involuntary muscles, and those of a mixed character, like the voluntary muscles absorb a certain amount of animal energy by their contraction, and consequently such contraction could not be maintained continuously without exhausting the animal power. We find, accordingly, that nature has so regulated the organization, that all muscular action which is independent of the will is intermitting, so that the intervals of muscular repose or relaxation are, on the whole, equal to those of muscular tension. The heart of an animal beats incessantly, sleeping or waking, during the continuance of its vitality; and this action may continue in man even for a century. The muscles, however, which produce it are never in state of tension for more than a moment, so that they are enabled to recover their energy in the alternate intervals of their relaxation.



MUSCLES OF THE FACE.—*Lardner.*

The various bands or muscles are here well delineated; notice the muscle round the lips to move the lips at pleasure. These muscles, it must be borne in mind, are acted upon by the will from the nervous centres in the base of the brain, through the telegraph wires, or nerves of motion and sensation in the spinal column.

A stratum consisting of five or six muscles (1, 2, 3, 4, 5), of considerable surface, but little thickness, covers the entire surface of the head from the brows to the back of the neck, called by anatomists, according to their local position, *occipital*, *frontal*, and *auricular*, the action of which is to move the scalp, with the hair, the ears, the integuments of the forehead and temples, and the brows. By their contraction, the eyebrows are drawn upwards, the skin of the forehead thrown into transverse folds and wrinkles, the scalp and hair moved backwards and forwards, and the features thereby made to express various and often opposite emotions, according to the greater or less extent to which the action of these muscles is called into play. Joy, surprise, astonishment, or ecstacy, are attended with, or expressed by, a certain elevation of the brows. The contractions and wrinkling of the forehead, and the approach of the brows to each other, involve the more violent class of emotions, such as anger, hatred, indignation, and menace.

The eyes and eyelids, with their appendages, are moved by not less than twelve pair of muscles, of which, however, one only, called the orbicular (6), is superficially visible. These govern the entire play of the eyeball and the eyelids, the flow and suppression of tears, and, in part, the gestures of the brow. They combine, therefore, with the muscles above mentioned, in the expression of anger and menace, and also assume the gestures which express the very different and opposite sentiments of tenderness, love, grief, mental pleasure, and anguish.

The nose and nostrils are moved by six pair of muscles, three only of which (7, 8, 9) are superficially apparent; and fifteen pairs are appropriated to the various motions of the lips, the chin, the cheeks, and the lower jaw.

"It will be observed, that one of the most voluminous muscles, called the *masseters* (12), is appropriated—aided by another, not apparent superficially—to the motion of the lower jaw; that motion being subject, in the act of mastication, to a greater amount of resistance than any other facial gesture.

"The motions of the neck, and consequently of the head, are subject to the action of about forty pairs of muscles, of which a small number only are superficially visible. And some of those which appear in the figure do not belong exclusively to the neck, but are shared between it and the trunk.

"Eight pair of muscles are more or less called into play to make the head incline forwards, among which is the long muscle (19), extending from the ear to the point where the clavicle (32) is articulated with the sternum, or breast-bone; another, called the mylo-hyoidean, extending downwards from the jaw; and another, the digastric (21, 22), extending from the inner extremity of the jaw on one side, and its outer extremity on the other, to the hyoid bone (23).

The anterior muscles shown in Fig. 56, though located upon the trunk, act, for the most part, in moving the arms and shoulders. The superficial ones on the left side of Fig. 56 are few in number, and great in extent. The great pectoral muscle (56, ^{1}, ^{2}) has its origin along the edge of the breast-bone (56, ^{1}), and along something less than half the length of the clavicle (56, ^{6}) and from these lines the fibres converge to a point a little below the head of the humerus, and on the inside part of that bone. The clavicular fibres of this muscle, therefore, draw the arm obliquely upwards and inwards, having a tendency to secure the head of the bone in its socket; while the sternal fibres, being nearly horizontal, draw it inwards towards the side. The lesser pectoral muscle, which is covered by the greater, is shown at 56, ^{13} It is attached at its origin to three of the ribs,—the third, fourth, and fifth, and at its insertion to a process (the coracoid) of the scapula.

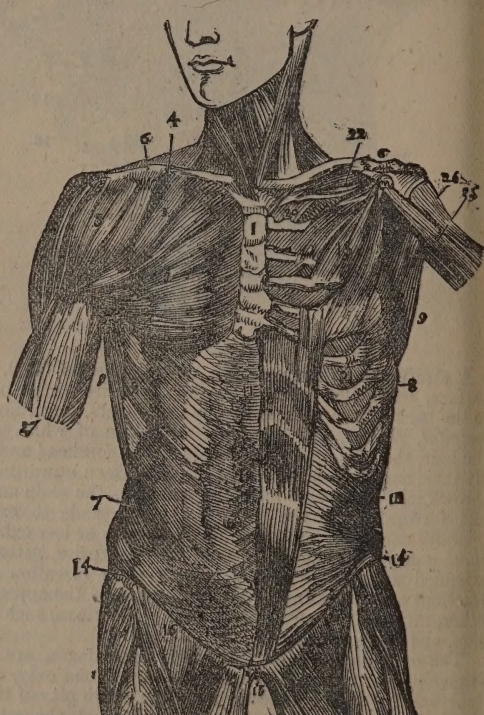


Fig. 56.

The dentelated insertion of the great serrated muscle, already described, attached to the ribs, is shown at 56, ^{8}. The front part of the deltoid, already mentioned, is also shown at 56, ^{5}.

"Seven pair of muscles are employed, together or separately, in inclining the head backwards, among which there appear in the figure the trapezius (20) and the splenius (28). Seven pair are engaged in inclining the head sidewards, several of which are also those—such as 19 and 20—which incline the head backwards."

(*Lardner.*)—The principal anterior muscles of the trunk and shoulders are shown in Fig. 56, those on the left being superficial, and those on the right the deeper layer covered by the former. In proportion to the surface over which they are spread, these muscles are much less numerous than those of the back, a circumstanee which naturally arises from the fact already indicated, that the weight of the trunk, being chiefly in front of the spine, is altogether supported and, for the most part, moved by the posterior muscles.

In Fig. 54 the superficial muscles of the back, including the neck, shoulder, and haunch, are shown on the left side of the spine; and those of the second layer, disclosed by the removal of the former, on the right side.

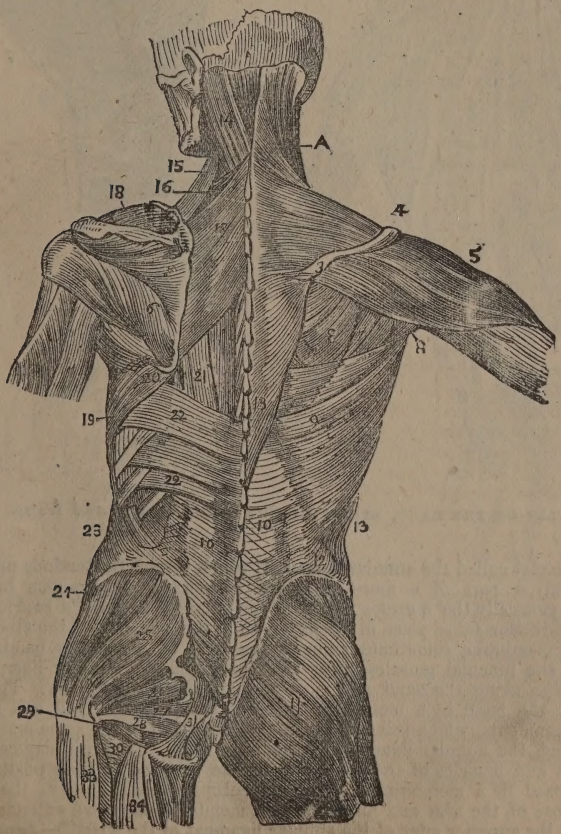
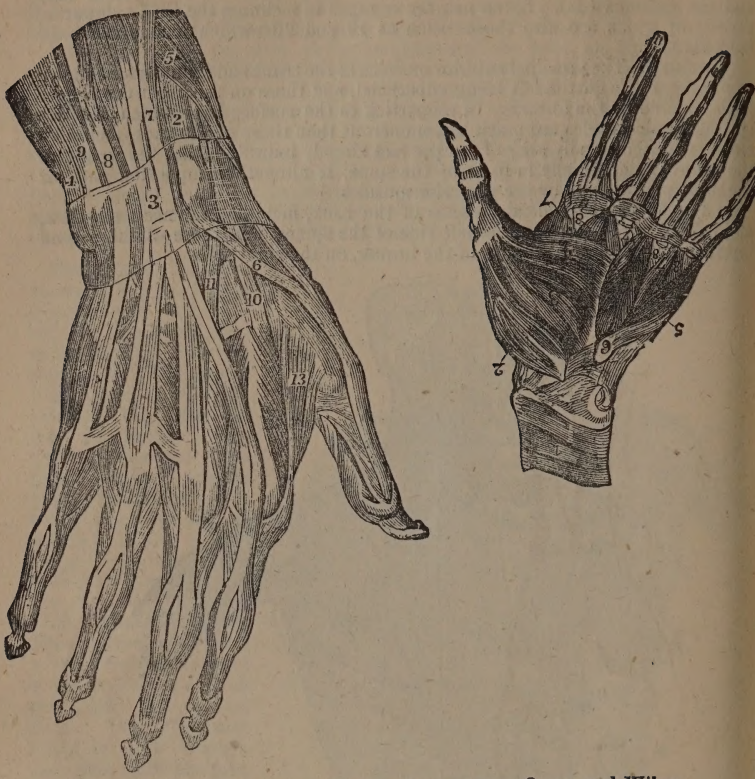
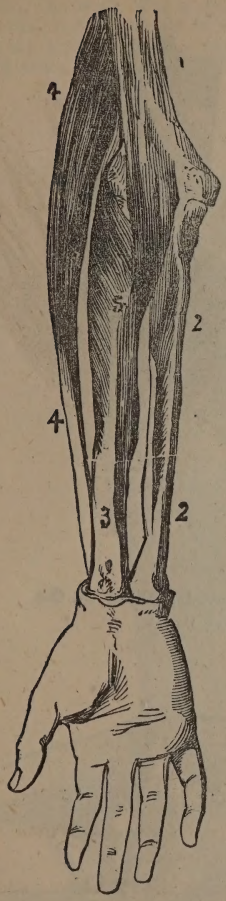


Fig. 54.—*Lardner.*



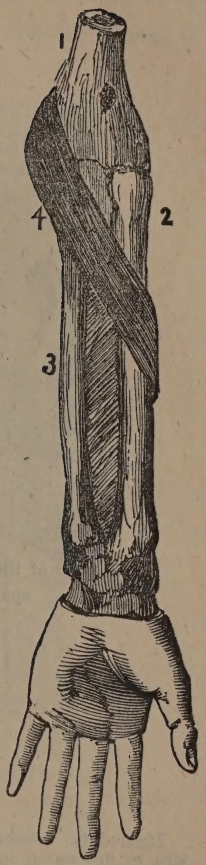
MUSCLES OF THE HAND, STRIPT OF THE SKIN.—*Quain and Wilson*

"The bracelet called the annular ligament, which retains the tendons upon the wrist, is only a part of a more extensive system of membranous binding, enveloping generally the muscles and their tendons. Wherever a considerable change of direction takes place in the latter, as in the instance of the elbow and wrist, this membrane sometimes assumes the form of a strap or band. The tendons of the brachial muscles, after passing within the annular ligament of the wrist, pass along the hand, and most of them along the fingers. They are confined on the hand by a membrane such as that just described, and on the fingers by ligaments, which retain them in their position in the same manner as that in which the annular ligament of the wrist acts. Thus we may conceive the tendons and muscles of the hand and fingers retained in their position by being enclosed in a membranous and ligamentous glove; and, in the same manner, those of the arm and humerus, by a membranous sleeve extending upwards from the superior edge of the annular ligament of the wrist."—*Lardner.*



MUSCLES OF THE ARM.—*Lardner.*

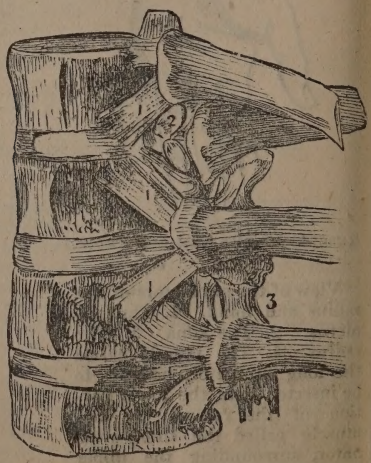
View of the supinators of the radius and hand. 1. The humerus. 2. The ulna. 3. The radius. 4. The muscle called the long supinator, passing to be inserted into the lower portion of the radius. 5. The muscle called the short supinator, surrounding the upper part of the radius.



VIEW OF THE PRONATORS OF THE HAND.

1. Lower end of the humerus. 2. The radius. 3. The ulna. 4. The muscle called the round *pronator*, one of the powerful pronators of the hand.

A view of the muscles called intercostals, filling up the spaces between the ribs.—*Dr. Smith.*



Ligaments connecting the ribs to the spinal column. 1, anterior ligaments; 2, inter-articular ligament; 3, ligaments of the necks of the ribs. —*Dr. Smith.*

(*Dr. Lardner.*) The muscles which surround the thigh-bone, between the hip and the knee, are shown in Figs. 70 and 71; the former presenting a posterior and the latter an anterior view of the left thigh.

Of these muscles, 70^1, 70^2, 71^1, 71^2, 71^3, 71^{11}, 71^{12}, and 71^{13} originate in the

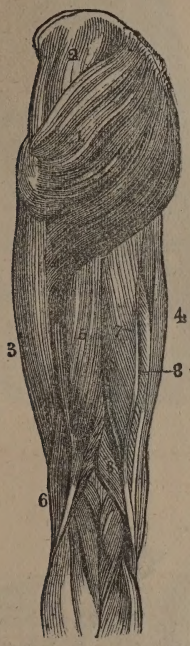


Fig. 70.

Fig. 71.

pelvis, have their insertions in the thigh-bone, and are therefore motor muscles of the thigh. All the others, passing below the knee, are inserted in one or other of the bones of the leg, of which accordingly they are either flexors or extensors, according as they are inserted in the posterior or anterior part.

The muscles which surround the bones of the leg, like those which invest the fore-arm, throw out low tendons, which, passing down the instep and to the heel, are inserted in the bones of the foot and toes in the same manner as those of the fore-arm are inserted in the bones of the hand and fingers. And in the same manner as the bellies of the muscles of the arm form the fleshy mass at its upper part, tapering into mere tendons at the wrist, the bellies of the muscles of the leg form the fleshy part of the calf, tapering as they descend into tendons which surround the instep and heel.

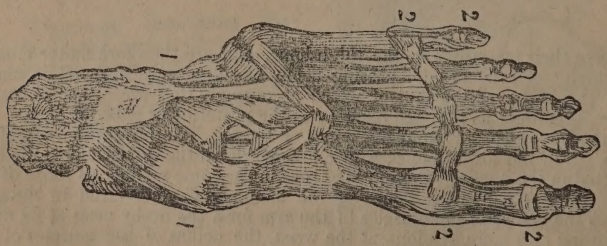
The patella, or knee-pan, is a light but strong bone, of the figure of the heart

as painted on playing cards, placed at the fore part of the joint of the knee, and attached by a strong ligament to the tibia, the motions of which it follows. It is lodged, when the knee is extended, in a cavity formed for it in the femur; when bent, in a cavity formed for it at the fore part of the knee.

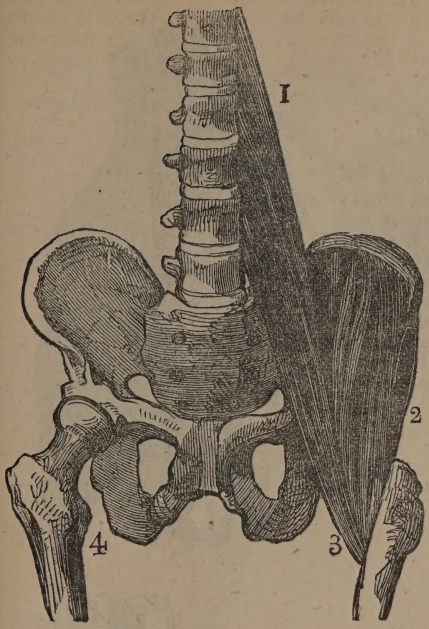
Fig. 72.

Fig. 73.

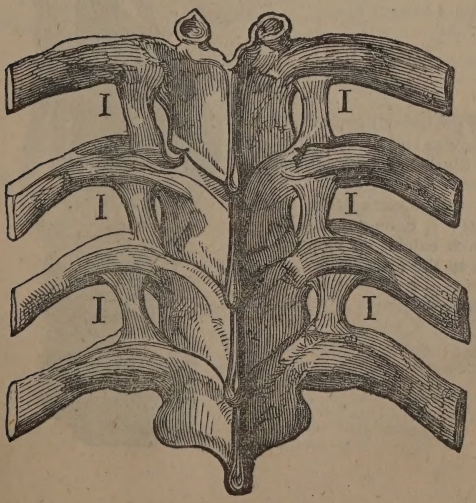
A front view of the superficial muscles of the left leg is given in Fig 72, and a back view in Fig 73.



General view of the ligaments of the sole of the foot. 1, ligaments connecting the bones of the tarsus; 2, ligaments connecting the bones of the toes.

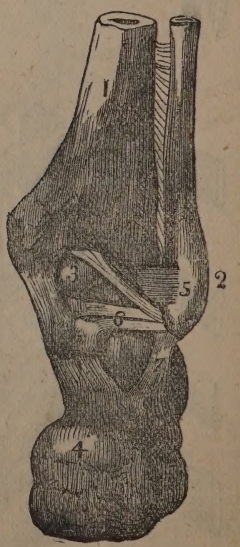


View of the muscles that bend the thigh. 1, the muscle called psoas; 2, the muscle called iliacus; 3, tendons of these muscles, going to be inserted into the trochanter minor of the femur.—*Dr. Smith.*

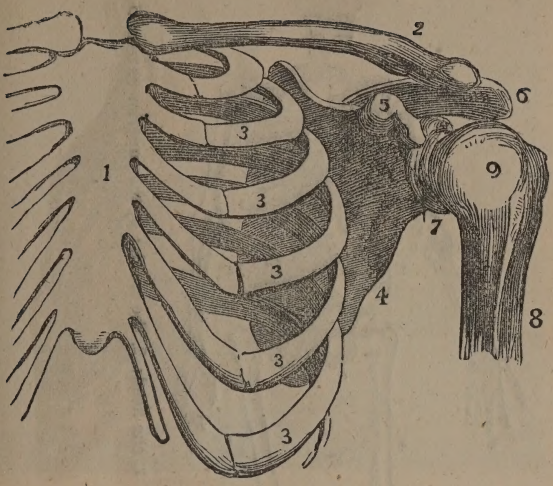


1, &c., Ligaments connecting the ribs to the vertebræ behind the spine.—*Dr Smith.*

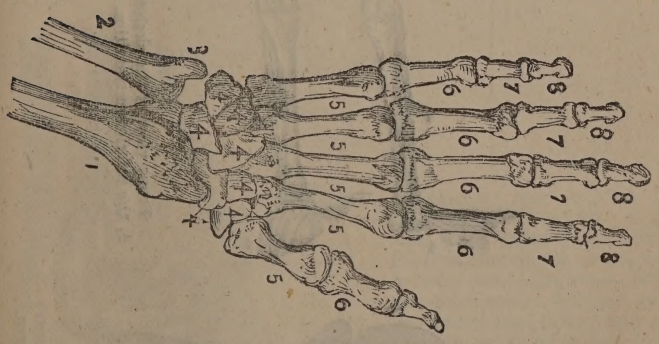
General view of the ligaments of the knee-joint. 1, lower end of the femur; 2, upper end of the tibia; 3, upper end of the fibula; 4, the patella; 5, united tendons of the extensor muscles; 6, ligaments of the patella; 7, the capular investment of the knee; 8, the internal lateral ligament; 9, the external lateral ligaments; 10, the posterior ligament; 11, the ligament connecting the tibia and fibula; 12, a portion of the inter-osseous ligament.



General view of the posterior ligaments of the ankle-joint. 1, Lower end of the tibia; 2, lower end of the fibula; 3, astragalus; 4, os calcis; 5, ligament between the tibia and fibula; 6, ligament passing from the fibula to the astragalus; 7, ligament passing from the fibula to the os calcis; 8, ligament passing from the tibia to the astragalus



1, Sternum; 2, clavicle; 3, ribs; 4, anterior surface of scapula; 5, coracoid process of scapula; 6, acromion process of scapula; 7, margin of glenoid cavity of scapula; 8, body of the humerus or bone of the arm; 9, head of the humerus.—*Dr. Smith.*



BONES OF THE HAND.—*Dr. Smith.*

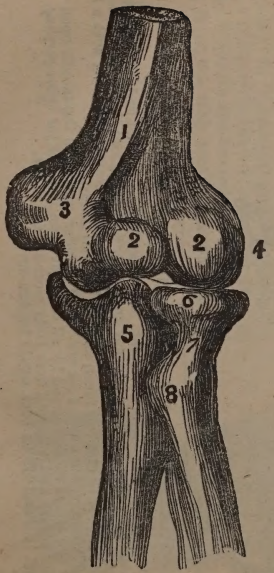
TREATMENT OF RELAXED SORE THROAT.

Keep *dry* spongio and flannel over throat, and when it feels too hot and uncomfortable, take it off and rub throat with tepid vinegar and water and hand, and then put it on again. Gargle three or four times a day with tepid water, and keep a mackintosh-bag with a little hot water to upper part of chest as much as possible, and lie still.

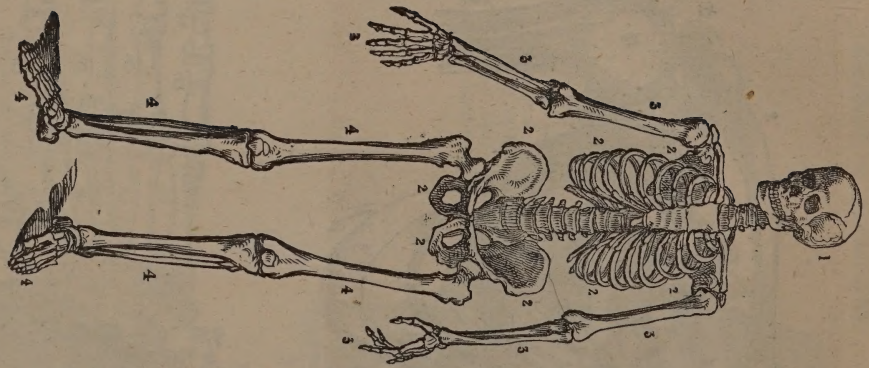
If throat feels choky, then use a jar with boiling water, and hold the mouth open wide over it, and let the steam go down, and let all the saliva run into the jar *before gargling*.

Use 22½ with vinegar and water all over body morning and night.

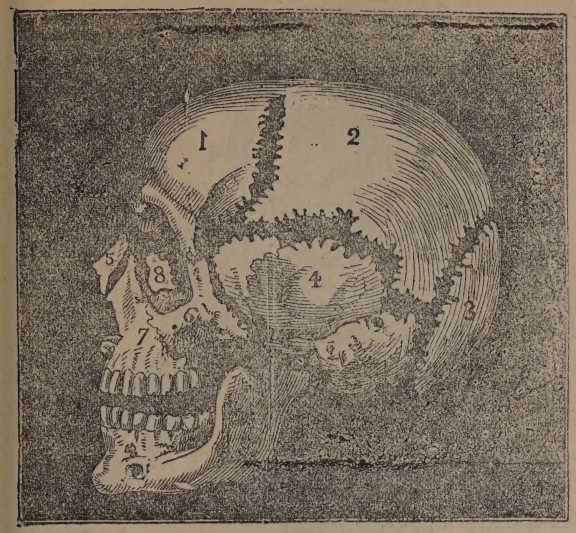
178 or 179 and 163¾ and 179 on back would hasten cure.



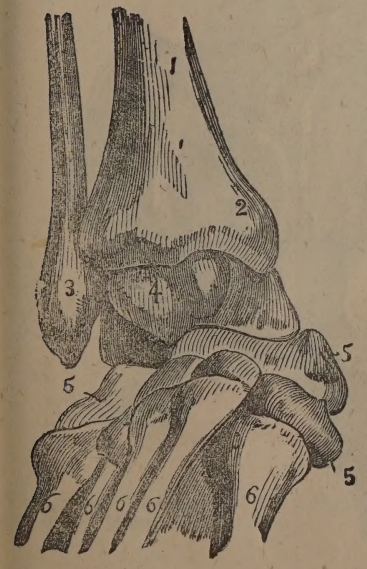
BONES OF THE ELBOW JOINTS AND ARM, FROM DR. SMITH.



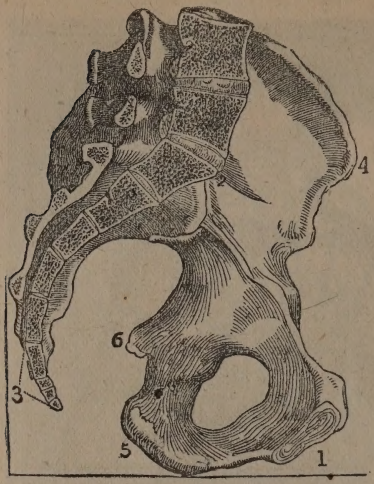
Front view of the skeleton. 1, the head; 2, the trunk; 3, the superior extremities; 4, the inferior extremities.



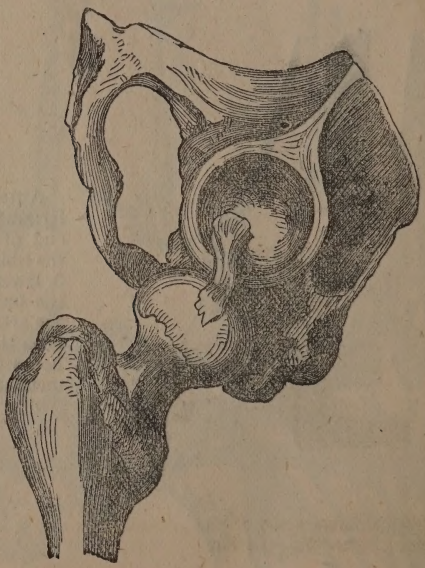
Bones of the skull separated; side view. 1, Frontal bone; 2, parietal bone; 3, occipital bone; 4, temporal bone; 5, nasal bone; 6, malar bone; 7, superior maxillary bone 8, the unguis; 9, the inferior maxillary bone.



Anterior view of the bones forming the ankle-joint. 1. lower end of the tibia; 2 production of the tibia, forming the inner ankle; 3, lower end of the fibula, forming the outer ankle; 4, upper part of the artragalus; these three bones form the ankle joint; 5, 5, 5, other bones of the tarsus; 6, 6, 6, 6, 6, 6, metatarsal bones.—*Dr. Smith.*

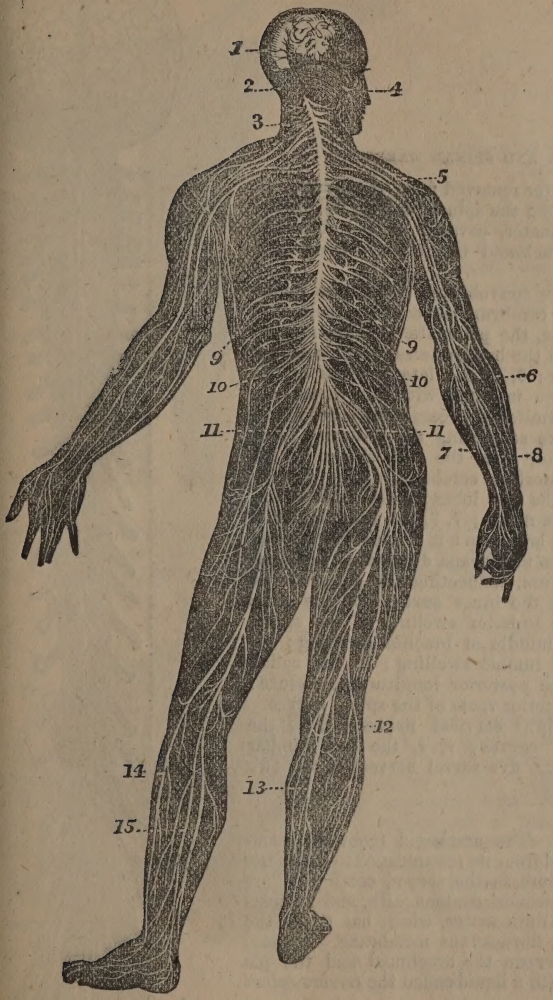


No. 3, termination of the spine; 1, 2, 4, 6, bones connected with the hip. (*Lardner.*)



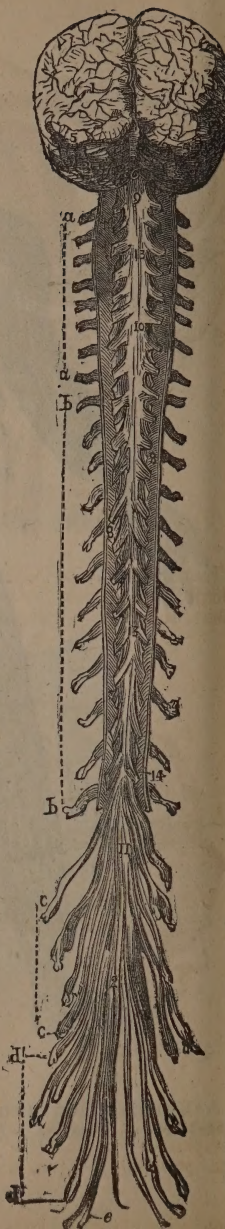
THE HIP-JOINT.

A view of the head of the femur drawn out of its socket, and suspended by the round ligament, to show more clearly the action of the ligament in retaining the head of the femur in its socket. Rheumatism sometimes attacks this ligament and the connecting muscles, and forces the head of the thigh-bone out of the socket.



1, cerebrum; 2, cerebellum; 3, spinal cord; 4, facial nerve; 5, brachial nerves; 6, median nerve; 7, ulnar nerve; 8, internal cutaneous nerve; 9, intercostal nerves; 10, lumbar nerves; 11, sciatic nerves; 12, external peroneal; 13, tibial nerves; 14, external peroneal nerve; 15, external saphena.

A theoretical illustration of the general form and disposition of the cerebro-spinal system of nerves.—*Lardner.*



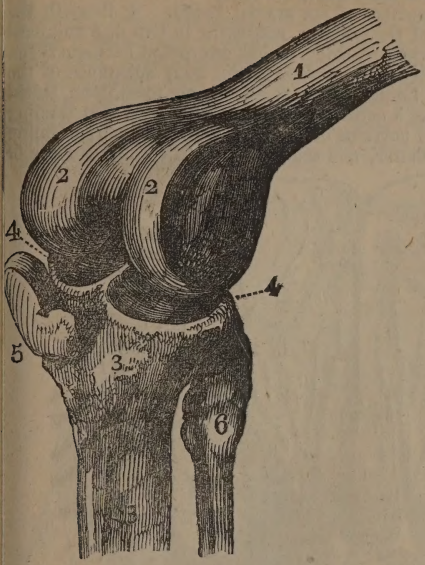
BRAIN AND SPINAL MARROW.

The dura mater removed from the brain, and spread open along the spinal cord, so as to display the pia mater, covered by the thin and transparent arachnoid membrane.—*Quain and Wilson.*

Nos. 1, 1, the convolutions of the two hemispheres of the cerebrum covered by their vascular membrane, the pia mater; 2, the median fissure between the hemispheres, which receives the falx major; 3, 3, the lateral lobes of the cerebellum, also invested with pia mater; 4, the superior vermiform process of the cerebellum; 5, 5, the fissure separating the posterior lobes of the cerebrum from the cerebellum, which lodges the tentorium cerebelli; 6, the depression between the two lobes of the cerebellum, lodging the falx minor; 7, 7, the dura mater of the spinal cord laid open: it is entirely removed below; 8, 8, the membrana dentata, or ligamentum denticulatum, connecting the sides of the spinal cord to the inner surface of the dura mater; 9, the superior swelling of the spinal cord; 10, the middle or brachial swelling; 11, the inferior or lumbar swelling; 12, the cauda equina; 13, the posterior longitudinal fissure; 14, 14, the posterior roots of the spinal nerves.

a, *a*, the eight cervical nerves; *b*, *b*, the twelve dorsal nerves; *c*, *c*, the five lumbar nerves; *d*, *d*, the five sacral nerves; *e*, the two coccygeal nerves.

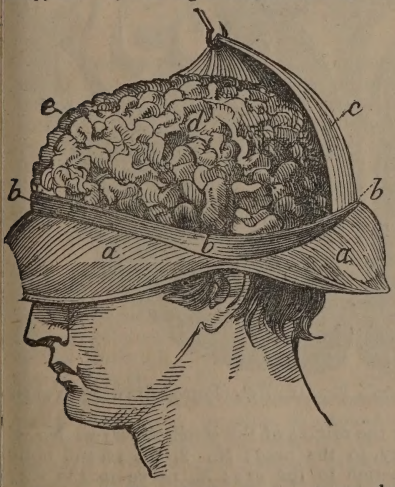
ARACHNOID.—The arachnoid (cobweb) membrane, so called from its resemblance to a spider's web in its texture, is the second coating. Part of it is in immediate contact with, and inseparable from, the dura mater, which has so far the character of a fibro-serous membrane. A space intervenes between the arachnoid and the pia meter, filled with a liquid called the *cerebro-spinal fluid.—Lardner.*



BONES OF THE KNEE-JOINT.

No. 5, the patella or knee-cap; No. 6, the upper end of the fibula or small bone of the leg; No. 1, thigh bone; 3, leg bone.—*From Dr. Smith.*

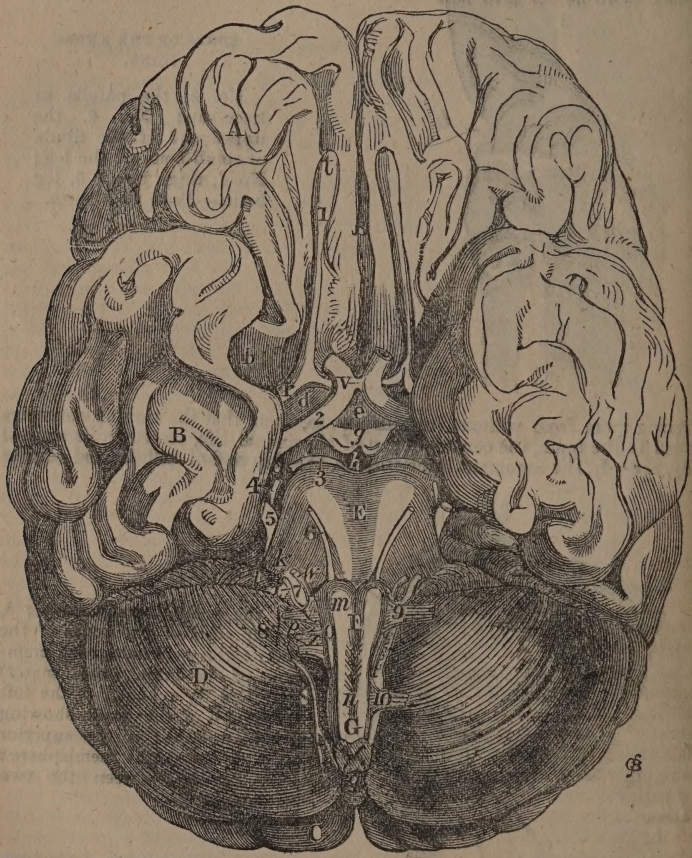
Tracing them from without inwards we see, then, that the various coverings fforded to the brain, the central organ of the animal life, seated in its vaulted avity, are—1, The tegument, consisting of the skin and of cellular and adipose



a, the scalp, turned down; *b*, the cut edge of the bones of the skull; *c*, the external strong membrane of the brain (dura mater) suspended by a hook; *d*, the left hemisphere of the brain, showing its convolutions; *e*, the superior edge of the right hemisphere; *f*, the fissure between the two hemispheres.

iembrane. 2, Beneath the tegument, muscles, in the forepart and at the vertex, omparatively slender and delicate; at the sides and posteriorly, thick, strong nd powerful. 3, Beneath the muscles, a thin but dense membrane, termed the

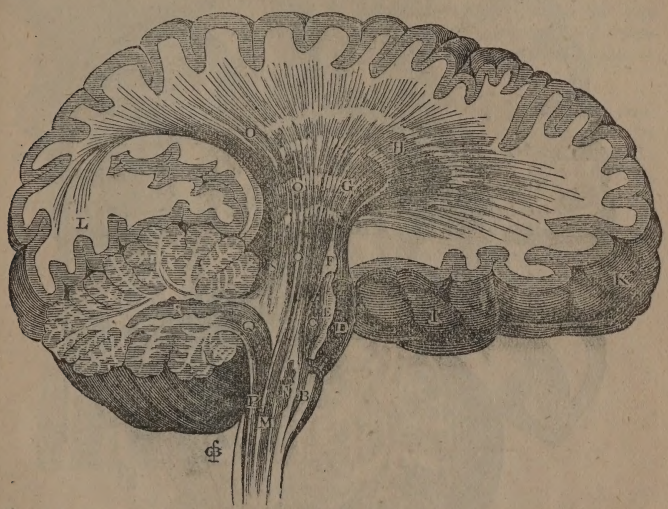
pericranium, lining the external surface of the cranial bones. 4, Beneath the pericranium, the bony substance of the cranium, consisting of two firm and hard bony plates with a spongy, bony structure, called diploë, interposed between them. 5, Immediately in contact with the inner surface of the bony substance of the cranium, and forming its internal lining, the dense and strong membrane, called the *dura mater*, not only affording a general covering to the brain, but sending firm partitions between individual portions of it. 6, A serous membrane lining the internal surface of the dura mater, and reflected over the entire surface of



This cut is from Quain and Wilson's beautifully-coloured drawing in their Nerves of the Human Body.

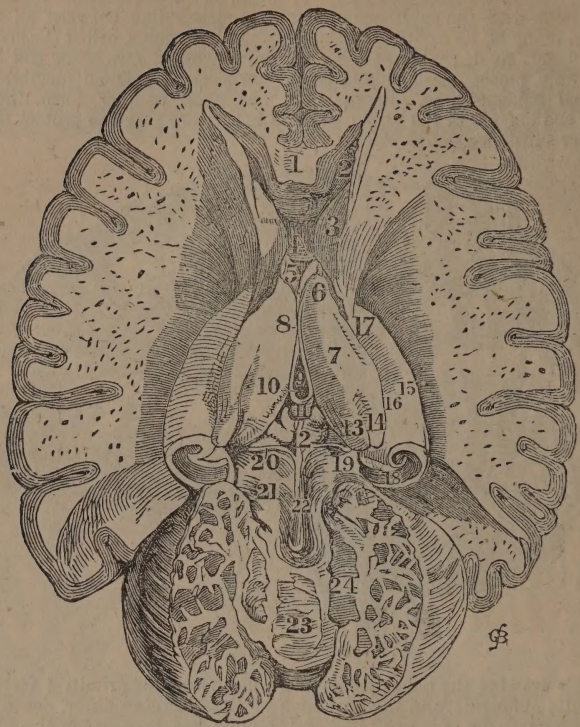
"The base of the brain, displaying the origins of the cerebral nerves. No. 1, the first cerebral nerve, the olfactory, to the nose; No. 2, the second optic nerve to the eye; No. 3, nerve of motion to the eye; X, nerve to the ear; G, junction with spinal column, the medulla oblongata; D, the cerebellum; E, pons Varolii.

the brain, termed the arachnoid tunic. 7, A thin and delicate membrane in immediate contact with the substance of the brain, descending between all its convolutions, lining all its cavities, and enveloping all its fibres, called the pia mater. 8, An aqueous fluid, contained between the arachnoid membrane and the pia mater. Skin, muscle, pericranium, bone, dura mater, arachnoid membrane, pia mater, and aqueous fluid, superimposed one upon another, form, then, the covering and defence of the brain; so great is the care taken to protect this soft and tender substance.—*Dr. Smith.*



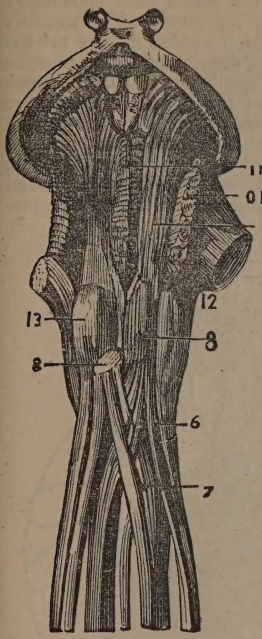
"In this drawing the development of the brain from the primitive fasciculi of the medulla oblongata, and the formation of the diverging fibres, described by Gall and Spurzheim, are exhibited. A section has been made through the outer third of the medulla oblongata and cerebellum; the crus cerebelli has been divided, and the outer convolutions of the right hemisphere carefully raised in the direction of the fibres."—*Quain and Wilson.*

A. The medulla oblongata. B. The corpus pyramidale. C. The fibres of the corpus pyramidale expanding in the grey substance of the pons Varolii. D. The pons Varolii. E. The divided edge of the transverse or converging fibres of the pons Varolii. F. The passage of the fibres of the corpus pyramidale through the crus cerebri. G. The course of the fibres through the thalamus opticus, the inferior cerebral ganglion of Gall. H. The corpus striatum (superior cerebral ganglion, Gall), from which the fibres diverge to the convolutions of the middle and anterior lobes. I. The lower part of the middle lobe of the cerebrum. K. The anterior lobe. L. The posterior lobe. M. The corpus olivare. N. The ganglion of the corpus olivare. O, O. The course of the fibres of the corpus olivare through the pons Varolii, crus cerebri, thalamus opticus and corpus striatum, to expand into the upper convolutions of the hemisphere and posterior lobe. P. The corpus restiforme. Q. The fibres of the corpus restiforme entering the substance of the cerebellum. R. The corpus dentatum (vel rhomboideum), or ganglion of the cerebellum. S. The processus e cerebello ad testes, or fibres of communication between the cerebellum and cerebrum



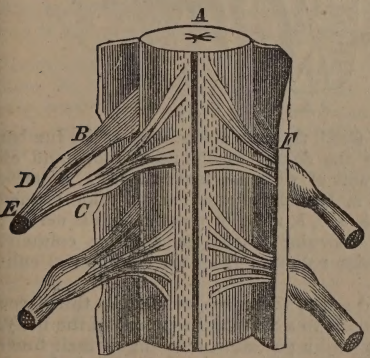
Section of the base of the brain, showing the NERVOUS CENTRES from and upon which the mind makes impressions to communicate sensation and motion to every part of the body through its telegraphic system, the nerves, which here all concentrate. B is the forepart of the brain, top of the forehead; A is the cerebellum at the back of the head, cut open to show other parts. A great deal has been written on the pituary gland, No. 11, as the one central point where the mind acts from.—*See page* 13 *of this Work.*

1. The anterior extremity of the corpus callosum; 2, the anterior corner of the lateral ventricles; 3, part of the corpus striatum; 4, the anterior commissure of the third ventricle; 5, the crura of the fornix; 7, the thalamus opticus; 8, the fissure between the thalami optici, which is called the third ventricle; 9, the foramen commune posterius; 11, the pineal gland; 12, the corpora quadrigemina; 13, the corpus geniculatum internum of the thalamus opticus; 14, part of the corpus geniculatum externum; 15, the hippocampus major; 16, the corpus fimbriatum; 17, the pes hippocampi; 18, the cut surface of the hippocampus major, showing the convoluted arrangement of the grey and white substance of which it consists; 19, 20, the upper surface of the crus cerebri; 21, the processus è cerebello ad testes; 22, the valve of Vienssens; 23, the middle portion of the cerebellum connecting the two lateral lobes.—*Quain and Wilson.*



VIEW OF THE CONSTITUENT CORDS OF THE SPINAL MARROW, SEPARATED, AND UNITING IN THE PYRAMIDS OF THE BRAIN.—*Lardner.*

6. Anterior cord dividing itself into two, of which the innermost contributes to the formation of the corresponding pyramid; 7, middle or lateral cord, divided into four, which pass from the left to the right side, intersecting an equal number of similar ones coming from the opposite side, and taking the inverse direction; 8, the pyramids, of which the right is cut off immediately above the intersection, to show the olivary body (13) behind it.

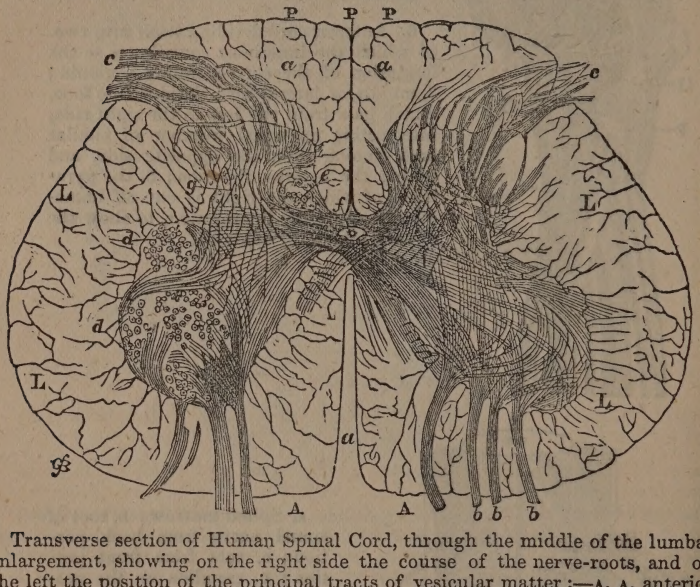


A, Spinal marrow; B, root of spinal nerve from back portion; C, root from front portion; D, ganglion on the posterior part; E, the two parts united in one cord; F, the outer coating of spinal marrow

A section of the spinal marrow, showing the connexion between it and the spinal nerves by double roots, the nerves of motion and sensation.

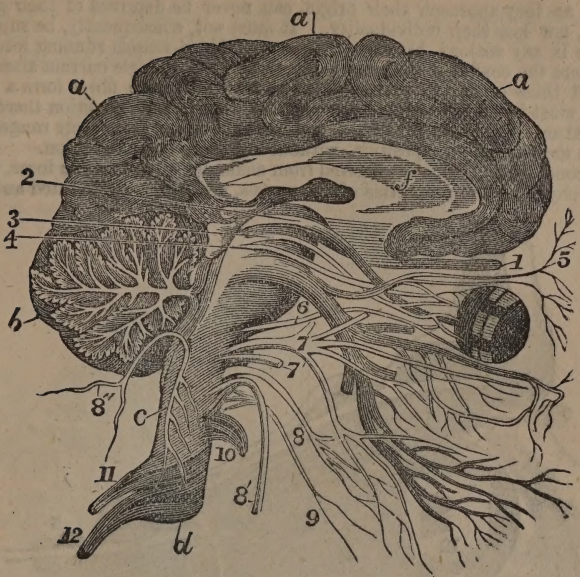
According to Sir Charles Bell, Magendie, and others, a part of the filaments which compose each spinal nerve rise from [or terminate in] the back portion, and a part from the front portion of the spinal marrow (See Eng.). Those which rise from the back portion, *b*, almost immediately run into a ganglion *d*, and proceeding from this, they unite with those that come from the front portion *c*, and form the cord *e*, which goes out to be dispersed over the body. But in

entering into the formation of the cord, the filaments retain their filamentary form and original character, and are again ultimately separated. The filaments which rise from [or terminate in] the back portion of the spinal marrow are the nerves of animal sensation. Some few of those are distributed to the muscles of voluntary motion, and endow those organs with a small degree of animal sensibility, by which the mind is informed of the action of the muscles in obedience to the will, and enabled to regulate the extent of the action. The rest of the posterior filaments proceed to the outer skin of the body, and by endowing it with a high degree of animal sensibility, constitute it a general organ of touch, which is the fundamental animal faculty of external relation. They however abound more in some parts than in others. In man, the ends of the fingers are pre-eminently qualified for this function.—*Graham.*



Transverse section of Human Spinal Cord, through the middle of the lumbar enlargement, showing on the right side the course of the nerve-roots, and on the left the position of the principal tracts of vesicular matter :—A, A, anterior columns ; P, P, posterior columns ; L, L, lateral columns ; *a*, anterior median fissure ; *p*, posterior median fissure ; *b*, *b*, *b*, *b*, anterior roots of spinal nerves ; *c*, *c*, posterior roots ; *d*, *d*, tracts of vesicular matter in anterior column ; *e*, tracts of vesicular matter in posterior column ; *f*, spinal column ; *g*, substantia gelatinosa.

With the spinal cord (in its limited sense) there are connected thirty-one pairs of nerves ; each of which corresponds to a vertebral segment of the body, and has two sets of roots, an anterior and a posterior, differing in their functional endowments. These divisions, of which the anterior is by far the larger, proceed to the anterior and posterior parts of the body respectively ; and are chiefly distributed to the skin and the muscles. The anterior branch is that which communicates with the sympathetic nerve.—In addition to these, however, the cranial prolongation of the spinal axis is the centre of all the cephalic nerves, save those of special sensation, which terminate in their respective ganglia. These cephalic nerves are for the most part distinguished by the peculiarity of their endowments.—*Carpenter.*



SIDE VIEW OF THE HUMAN BRAIN, SHOWING THE NERVES.

SPINAL CEREBRAL SYSTEM.—The three high order of nerves, through and by which the mind acts and governs the body.—(See p. 11 of this work.)

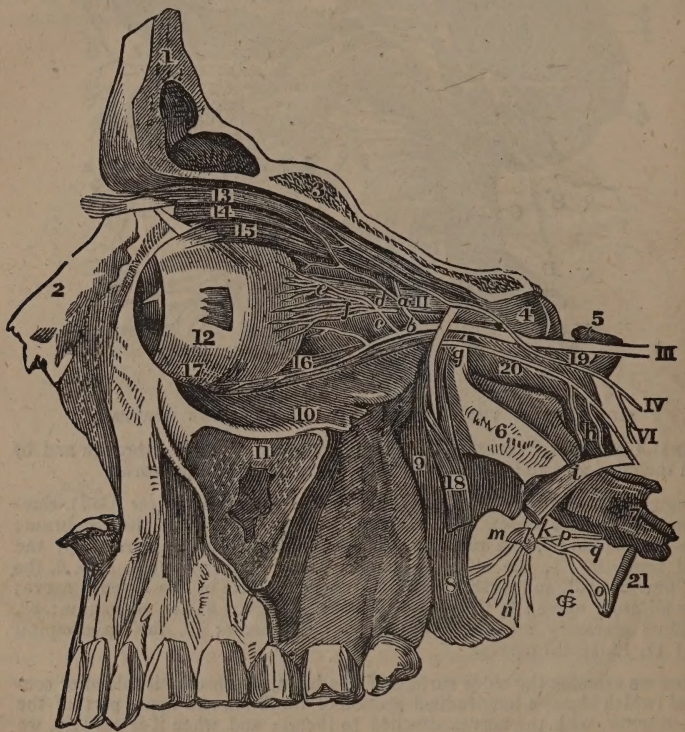
Longitudinal section of the cerebrum (*in the upper part of the head*), cerebellum (*back of the head*), and medulla oblongata. *a*, *a*, *a*, the cerebrum; *b*, the cerebellum; *c*, the medulla oblongata; *d*, the spinal marrow; *f*, the lateral ventricle. 1, the olfactory nerve; 2, the optic nerve; 3, 4, 5, 6, the third, fourth, fifth, and sixth nerves; 7, the portio dura of the seventh nerve; 7′, the auditory nerve; 8, the glosso-pharyngeal nerve; 8′, the par vagum; 8″, the spinal accessory nerve; 9, the hypoglossal nerve; 10, the suboccipital nerve; 11, 12, spinal nerves.

When we examine the outer surface of the brain, we observe it folded or convoluted (which shows a longitudinal section of the brain and upper part of the spinal marrow, with the nerves attached to them); and when it is cut into, we find it composed, 1st, of a grey pulpy substance, mostly placed externally, and, 2ndly, of a similar white substance, placed internally. The same materials exist in the spinal marrow, but the white matter is external, while the grey is internal.

The nerves generally, whatever be their apparent origin, pass through the system in ramifications more or less complicated, and, like electric wires, only discharge their functions, whether of motion or sensibility, at their terminations. The nervous cords are thus subject to endless division and subdivision, until they become in many cases so infinitely minute as to escape all observation, even by the aid of the microscope. Since each fibre has its own peculiar destination and special function, and since this destination and function is in relation with the brain, it must be apparent that the various ramifications, in successively uniting

together, as they approach their origin, can never be deprived of their proper functions, nor lose their individuality. It must not, consequently, be supposed that there is any analogy between the cases of blood-vessels running into each other, where the confluent streams are mixed, to form a single current after their union, and those of nerves coalescing, so that two or more fibres form a single cord. It must be considered, on the contrary, that in such coalition there is no actual mixture of nervous substance, and that the fibres are merely ranged side by side in mechanical juxtaposition, without any more intimate union.

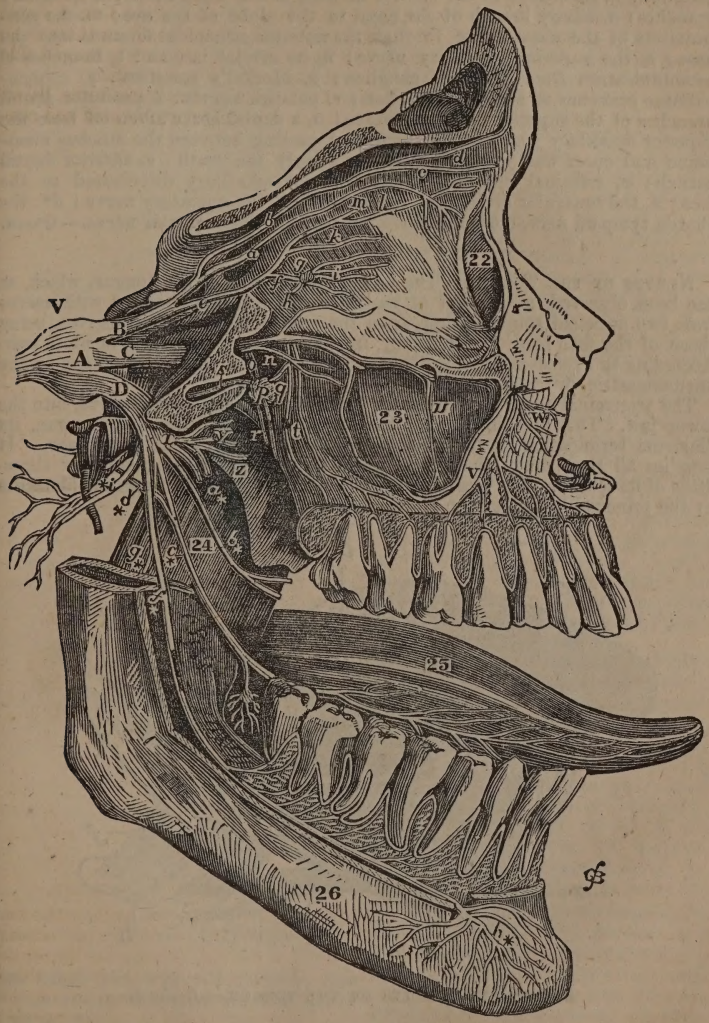
These conclusions, which are derived from analogies of irresistible force, based upon the physiological properties of the nerves, are fully corroborated and con-



THE TELEGRAPH WIRES, OR NERVES, FROM THE BRAIN TO THE EYE.

The nerves of the orbit, with the ophthalmic and otic ganglia, are here shown. 1, the section of the frontal bone, showing the cavity of the frontal sinus; 2, nasal bone of the left side; 19, the internal carotid artery. II. the optic nerve (*to the eye*); III. the third nerve. *a*, the superior branch of the third nerve; *b*, its inferior branch; *c*, the branch to the ophthalmic ganglion; *d*, the ophthalmic or lenticular ganglion; *e*, the upper fasciculus of ciliary nerves; *f*, the lower fasciculus. IV. the fourth nerve; VI. the sixth nerve. *i*, the trunk of the inferior maxillary nerve; *k*, its motor root; *l*, the otic ganglion; *m*, the internal pterygoid nerve, piereing the otic ganglion; *n*, filaments of communication with the auricular nerve.—*Quain and Wilson.*

firmed by direct observation. Each nervous cord is ascertained to be a bundle of fibres enclosed in a common sheath, these component fibres being very numerous, and of unequal thickness.



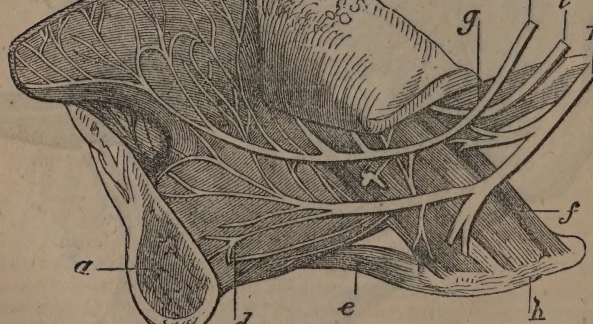
TELEGRAPH WIRES, OR NERVES, FROM THE BRAIN TO THE TONGUE, JAWS, &c. &c.

22, the depression in the lachrymal bone, for the lachrymal sac (*tears*); V the fifth nerve; A, the Casserian ganglion; B, the ophthalmic nerve (*to the eye*)

a, the lachrymal nerve (*causing tears to flow*); *b*, the frontal nerve; *e*, the nasal nerve (*for smell*); *f*, branch to the ophthalmic ganglion; *g*, the ophthalmic ganglion; *h*, its branch to the inferior division of the third nerve; *i*, its ciliary branches; *k*, ciliary branch of the nasal to the globe of the eye; *m*, the continuation of the nasal nerve through the anterior ethmoidal foramen into the nose; c, the superior maxillary nerve; *n*, its orbital branch; *o*, branches of communication from Meckel's ganglion; *p*, Meckel's ganglion; *q*, sphenopalatine branches of Meckel's ganglion; *r*, palatine nerves; *t*, posterior dental branches of the superior maxillary nerve; *u*, a dental nerve given off from the superior maxillary while in its canal, and passing between the mucous membrane and outer wall of the antrum to supply the teeth; *v*, anterior dental branch; *w*, terminal branches of the superior maxillary distributed to the face; *x*, the muscular division of the nerve; *c**, the gustatory nerve; *d**, the chorda tympani nerve; *h**, the mental nerve; *i**, the auricular nerve.—*Quain.*

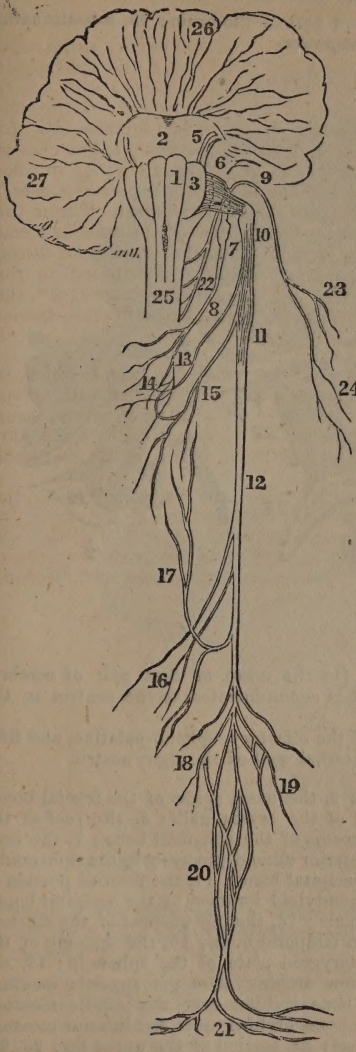
NERVES OF THE TONGUE.—The mucous membrane of the tongue, which, as has been observed, is the seat of gustative sensibility, is supplied with nerves from two principal sources: first, from the trigeminal or trifacial nerves, being those of the fifth pair; and secondly, from the glosso-pharyngeal, or ninth pair. According to Professor Sappey, filaments are also sent to this membrane by the pneumogastric, or tenth pair.

The trigeminal sends a voluminous branch, called the *lingual nerve*, into the lower jaw. This branch, entering the tongue, ramifies through the organ, its filaments terminating in the mucous membrane of the superior surface. It supplies all that part of the tongue which extends from the point over three-fifths of its length. The posterior two-fifths are supplied with nervous filaments by the principal branch of the glosso-pharyngeal.



NERVES AND MUSCLES OF THE TONGUE.—*Béclard.*

a, Section of the bone of the lower jaw; *b*, dorsal or superior surface of the tongue; *c*, vertical section of the tongue; *d*, genio-glossal muscle; *e*, genio-hyo-glossal muscle; *f*, hyo-glossal muscle; *g*, stylo-glossal muscle; *h*, hyoid bone; *k*, lingual nerve; *l*, glosso-pharyngeal nerve; *m*, hypoglossal nerve.

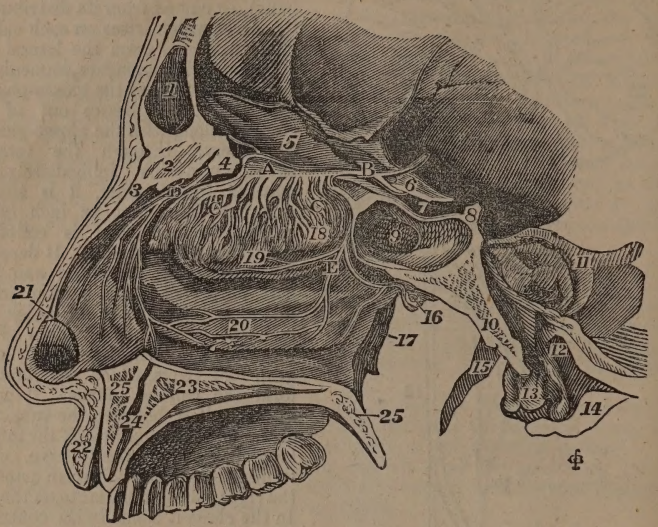


THE BRAIN AND NERVOUS CENTRES, AND PNEUMOGASTRIC NERVE BRANCHING OFF FROM IT.

As a specimen of the mode in which the nerves proceed from the brain, I give this, called the Pneumogastric, from the Greek (the lung and the belly), so named from its distribution. "A nerve which arises on each side by many filaments from the lateral part of the medulla oblongata, immediately below the origin of the glosso-pharyngeal nerve. It passes out of the cranium along with the glosso-pharyngeal nerve, through the foramen lacerum posterius. Immediately after quitting the cranium, it is slightly enlarged for about an inch of its course, forming what is called its ganglionic enlargement. It descends in the neck at the outer and back part of the common carotid artery, in the cellular sheath of which it is included. In the neck it gives off the pharyngeal branch, the superior laryngeal, and twigs which contribute to form the cardiac plexus. It passes into the chest between the subclavian artery and vein, guiding off the inferior laryngeal or recurrent nerve, which twines round the subclavian artery on the right side, and the aorta on the left. In the chest it sends twigs contributing to the formation of the pulmonary and œsophageal plexuses. Lastly, entering the abdomen, it is finally dispersed on the stomach, sending twigs to the omentum and to the neighbouring abdominal plexuses.

Origin and distribution of the Eighth Pair of nerves.—1, 3, 4, the medulla oblongata; 1, the corpus pyramidale of one side; 3, the corpus olivare; 4, the corpus restiforme; 2, the pons Varolii; 5, the facial nerve; 6, the origin of the glosso-pharyngeal nerve; 7, the ganglion of Andersch; 8, the trunk of the nerve; 9, the spinal accessory nerve; 10, the ganglion of the pneumogastric nerve; 11, its plexiform ganglion; 12, its trunk; 13, its pharyngeal branch forming the pharyngeal plexus (14), assisted by a branch from the glosso-pharyngeal (8), and one from the superior laryngeal nerve (15); 16, cardiac branches; 17, recurrent laryngeal branch; 18, anterior pulmonary branches; 19, posterior pulmonary branches; 20, œsophageal plexus; 21, gastric branches; 22, origin of the spinal accessory nerve; 23, its branches distributed to the sterno-mastoid muscle; 24, its branches to the trapezius muscle; 27, back of the head, the

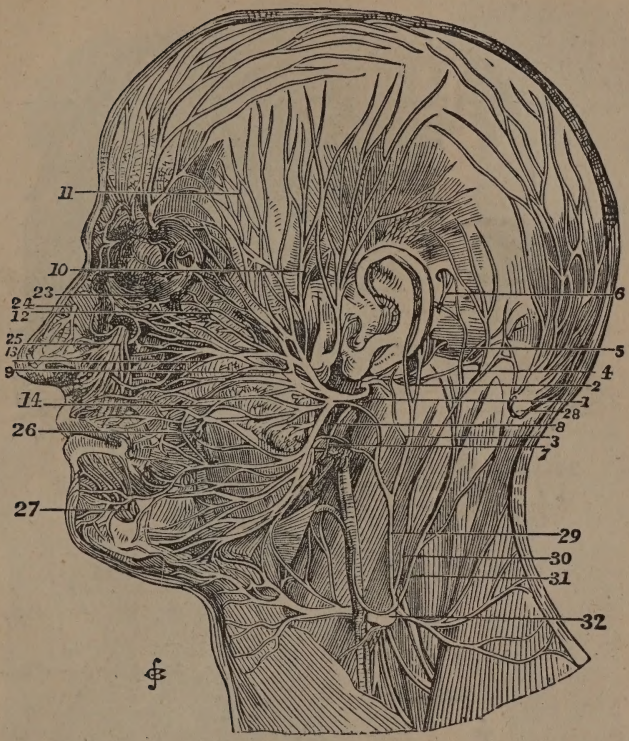
cerebellum, the opposite side to the fore part of the brain; 25, a continuation of the spinal marrow cut off.—*From Carpenter.*



The distribution of the olfactory (to the nose) or first pair of cerebral nerves, by which the sense of smell is communicated to the centres in the brain.

The distribution of the filaments of the olfactory, spheno-palatine, and fifth nerves, to the mucous lining of the external wall of the right nostril.

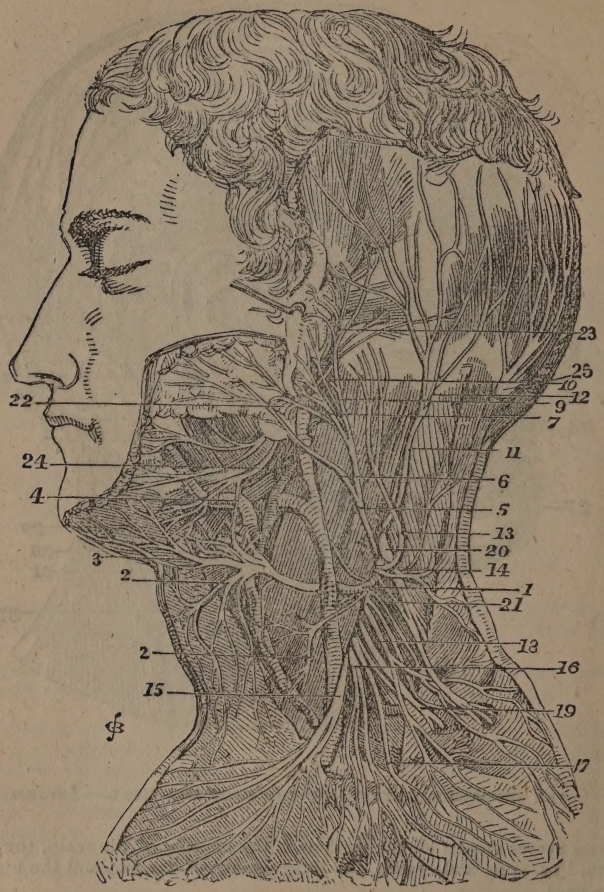
1, the cavity of the frontal sinus; 2, the nasal spine of the frontal bone; 3, the right nasal bone; 4, the root of the crysta galli; 5, the roof of the right orbit; 6, the anterior clinoid process of the sphenoid bone; 7, the concavity of the sella Turcica; 8, the posterior clinoid process; 9, the sphenoidal sinus; 10, the basilar process of the occipital bone; 11, the petrous portion of the temporal bone; 12, the anterior condyloid foramen of the occipital bone; 13, the right condyle of the occipital bone; 14, the inner aspect of the mastoid process; 15, the styloid process of the temporal bone; 16, the opening of the Eustachian tube; 17, the external pterygoid plate of the sphenoid; 18, the projection of the superior spongy bone arching over the superior meatus; 19, projection of the middle spongy bone arching over the middle meatus; 20, projection of the inferior spongy bone arching over the inferior meatus; 21, section of the soft parts of the nose; 22, section of the upper lip; 23, 23, section of the hard palate; 24, the naso-palatine canal; 25, section of the uvula. A, the bulb of the olfactory nerve; B, the three roots by which it arises from the brain; C, C, the distribution of its filaments to the mucous membrane covering the superior and middle turbinate bones; D, a twig from the nasal branch of the ophthalmic division of the fifth nerve; E, the spheno-palatine nerves, or nasal branches of Meckel's ganglion, entering the nasal fossa through the spheno-palatine foramen.—*Quain and Wilson*



THE SUPERFICIAL NERVES OF THE FACE AND HEAD.—*Lardner.*

These nerves govern all the motions of the muscles of the scalp, the ear, the mouth, lips, nose, and eyelids, the integuments of the ear, and the upper part of the neck.

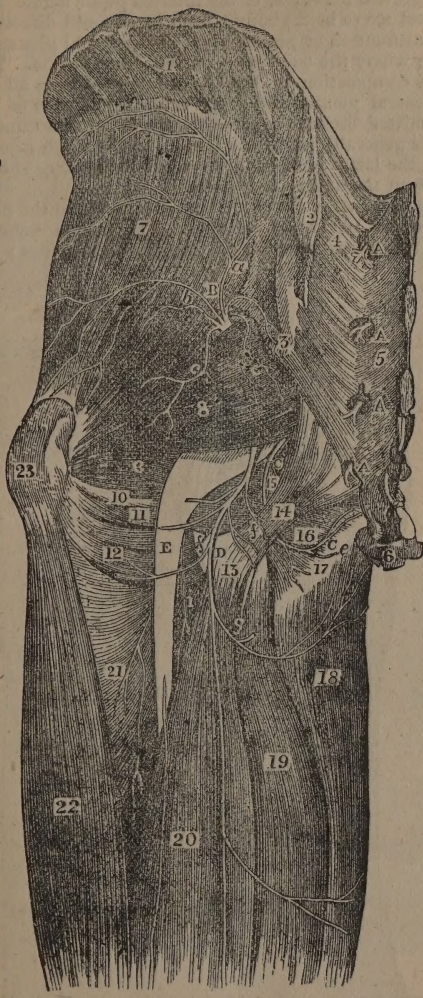
The nerves here described, which are all ramifications of the seventh pair, are exclusively motor, including no sensitive fibres. The parts to which they give motion receive sensibility from the nerves of the fifth pair, called the trifacial or trigeminal nerves. Thus the functions of motion and sensibility are in this case attached to different systems of nerves, while in the case represented in the following figures of the cervical and other nerves, each cord is a compound one, which includes both motor and sensitive fibres; and consequently, while it governs the movements of the parts over which it is distributed, it also receives sensitive impressions from them, which it transmits to the nervous centre.



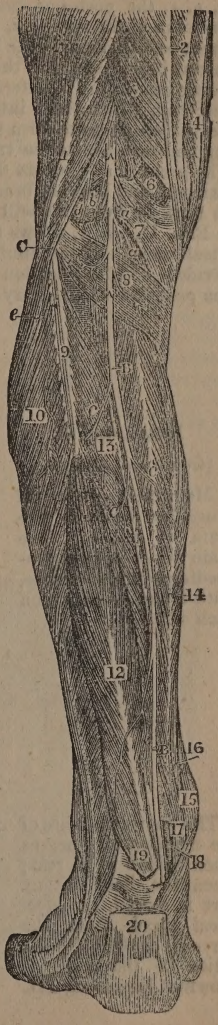
CERVICAL NERVES, TO CONVEY MOTION AND SENSATION TO THE PARTS REPRESENTED.—*Lardner.*

A system of nerves, also connected with the muscles of the neck and the lower part of the head, called the *cervical plexus*, is represented in the above engraving. A transverse branch (1) is directed forwards towards the jaw, and diverges into two ramifications; one (2) descending along the neck, and the other (3) ascending along the jaw. A branch (5), called the auricular, ascends to the ear. Various branches (15, 16, 17, 19) descend to the chest.

ENGRAVING 1.



ENGRAVING 2.



The great Sciatic Nerve, E, is often the seat of inflammatory action, called sciatica. See page 147 of this work.

The branches of the sacral plexus of spinal nerves, as they issue from the lower part of the spinal column, to give sensation and motion to the legs.

ENG 1. 23, the hip joint; 5, the lower end of the back-bone; 18 19 20, 21.

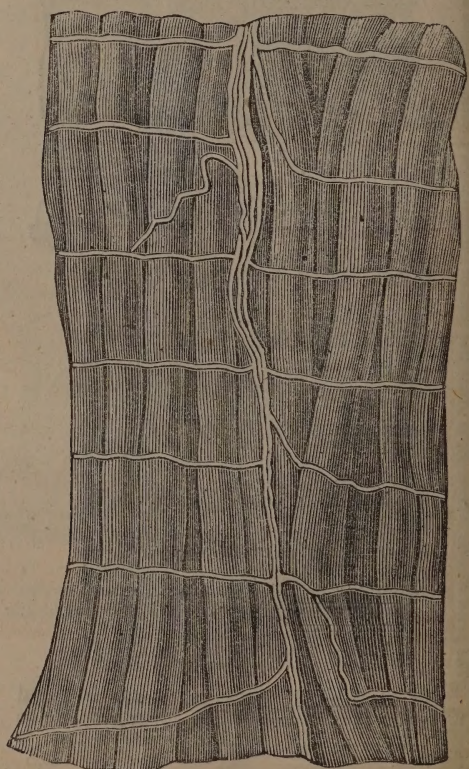
muscles of the thigh; E, the great sciatic nerve; D, the small sciatic nerve; A, A, A, the posterior branches of the sacral nerves, seen emerging from the vertebra of the spine; B, the gluteal nerve; C, C, the internal pudic nerve. The great sciatic nerve is the largest nerve in the body; from its size and direction, it may be considered as the continuation or prolongation of the spinal plexus, it being impossible to determine where the one ceases or the other begins. The fasciculi, which enter into its composition or bundle, are derived from all the nerves which go to form the sacral plexus, and every voluntary motion of the leg and foot has to be transmitted through some of the nerves of this bundle. The great sciatic nerves divide generally about the middle of the thigh into an external and internal branch, the latter proceeding down to the heel, as shown in Eng. 2; from this will be seen the nature of sciatica.

ENG. II.—A, A, shows the continuation of sciatic nerve, called here the popliteal nerve. B, the fibular nerve; 10, 12, 13, muscles. The tendon Achilles divided. 19, the tendon of the flexor muscle; 20, the tendon Achilles; 18, the posterior tibial artery.

ENGRAVING I.

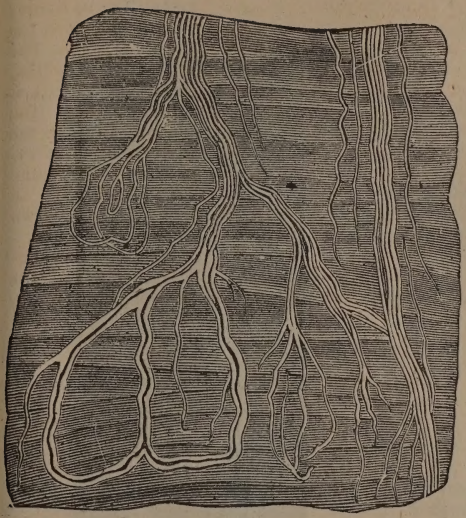
(*Quain and Wilson.*)

Magnified view of muscular fibres in the state of repose. The main nerve is seen proceeding down the centre, with branches from it on each side.



This shows the state of the muscles and nerves when a limb is at rest; when the limb or any part is moved, the electrical shock from the nervous centres, by the action of the mind, is shown at Engraving III.

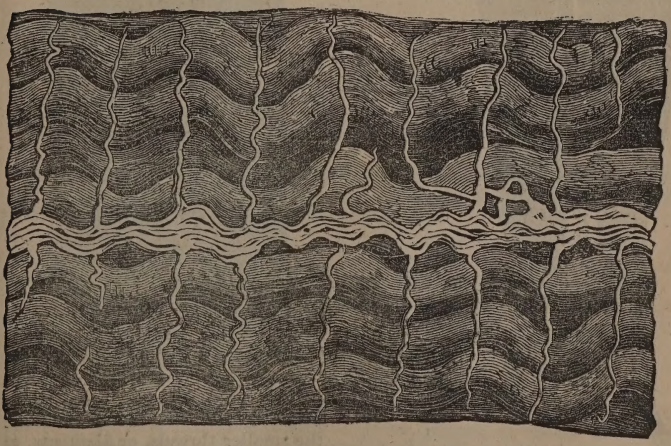
THE NERVES, OR TELEGRAPH WIRES, IN THE MUSCLES OR FLESH.



ENGRAVING II.

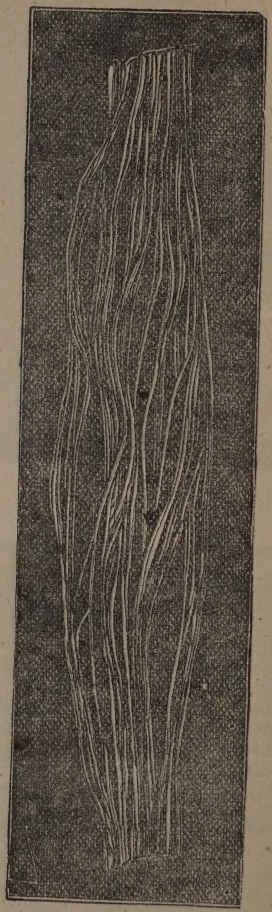
(*Quain and Wilson.*)

This engraving shows how the ultimate filaments of the nerves are disposed. After branching out someway, as in Engraving I., they become curved and return unto themselves, forming loops; or they incline towards a neighbouring branch, and form inverted arches; and, by this arrangement, carry power of motion and sensation to every part.

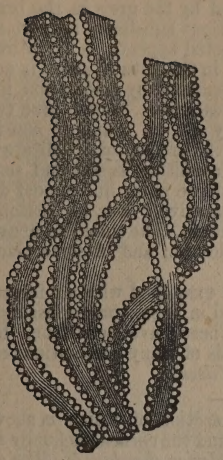


ENG. III.—(*Quain and Wilson.*)—This engraving represents the fibres in a state of contraction, when they are thrown into waving zigzag lines. This state is caused by the operation of the mind on the nervous centres in the brain, sending its telegraphic messages for action to some part by these nerves. This electric shock is performed for every voluntary motion.

A muscle, the biceps flexor with the nerve seen ramifying amongst the muscular fibre.

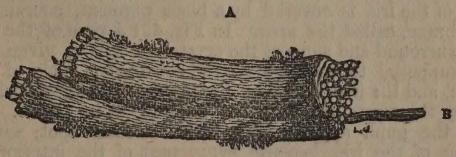


Nervous fibres, deprived of their neurilemma and unravelled, showing the smaller threads, or filaments, of which the fibres consist.—*Dr. Smith*



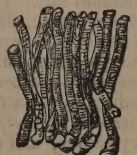
Ultimate fibres of nerve, very highly magnified; showing the strings of globules of which they consist.—*Dr. Smith.*

A nerve is represented in the following engraving, as drawn by Sir Charles Bell, consisting of many cords, or funiculi, wrapped up in a common cellular sheath. A is the nerve, and B a single funiculus drawn out from the rest. Independently of the common sheath, or neurilemma, each particular component cord



has a sheath of its own. All these sheaths are composed of the same fibrous tissue, which appears to be nothing more than a continuation of the tissue which constitutes the neurilemma or sheath of the spinal cord.—*Lardner.*

The interesting discovery has been made within these few years, by German anatomists, that these fibres, and all the fibres composing the nervous matter, are tubes filled with a fluid. The annexed sketch shows the fibres of one of the nerves magnified, with the fluid contained in them escaping from their extremities. It is probable that this discovery may be the means of throwing some light upon the functions of this hitherto little-understood part of the animal frame.



The nervous system is made up of two substances, readily distinguishable by their colour, texture, and consistence. One is greyish, or rather a pale ash colour, and hence named *cineritious* (substantia cinerea); and as in the brain it forms an investment for the white substance, it is usually termed *cortical* (s. corticalis). The other substance is of a pure white colour, and from the relation just indicated is called *medullary* (substantia medullaris). The grey substance invests the cerebral hemispheres, and forms at the same time several masses disposed in their interior; but in the medulla spinalis it is altogether deeply seated.

The white substance, on the contrary, is enclosed by the grey in the brain, but becomes the cortex in the medulla. The cineritious substance is more soft and vascular than the other, and when minutely injected appears as if entirely composed of vessels. Though the white substance in the natural state is not much firmer than jelly, it acquires a great degree of firmness by maceration in spirit, and presents at all times a distinctly fibrous appearance. When these two sorts of nervous matter are attentively examined, they will be found to consist of a peculiar substance called *neurine*, deposited in the areola, of a delicate cellular tissue. This anatomical element, in its natural condition, is soft and semi-fluid, and wherever it predominates much, the part will be pulpy and almost diffluent, whilst other portions of the structure are comparatively firm, by reason of the greater quantity of cellular tissue which they contain. The colour of neurine presents some varieties, being white, grey, or yellowish, and in some places of a dusky hue.

When a thin layer of nervous substance is examined with a microscope, it presents the appearance of small granules, placed in lines more or less regularly; but their form and size are liable to vary. These have been taken by some observers for globules, and have formed the basis of many speculations concerning the nature of nervous action.—*Quain and Wilson.*

The following, on the Eye, is from Lardner:—

The iris is a thin flat annular diaphragm, the section of which is shown at 7, dividing the space between the crystalline lens and the cornea unequally into two parts, called the *anterior chamber*, *a*, and the *posterior chamber*, *d*. The external or anterior surface of the iris is coloured blue, black, or hazel, differently in different eyes, and is the part which, seen through the transparent cornea, gives the characteristic colour to the eye. The pupil is a circular opening surrounded by the iris, through which the light received through the cornea is transmitted to the crystalline lens. By this means there is admitted to the crystalline a pencil of rays whose external limits are determined by the edges of the iris. The posterior surface of the iris is covered by a black pigment, contained in a thin transparent membrane, called the *uvea*. In Fig. 421 a view of the ciliary processes (1) which surround and support the crystalline lens is given. That lens, however, being supposed to be removed, the converging folds of which they consist are shown, and the iris (2) is seen by its dark posterior surface through the space filled by the crystalline, with the pupil (3) in its centre. When seen from the front, the pupil appears as a black circular spot, surrounded by the coloured ring of the iris, because every part of the interior of the eye which could be visible through it is coloured black. The aqueous humour fills the compartment of the eye between the cornea and crystalline, and, as its name implies, is a watery fluid holding in solution very minute quantities of albumen and common salt. It is separated from the cornea by an extremely thin transparent membrane, shown at 420, ^{11}, called the *membrane of the aqueous humour*, which however is represented much too thick in the figure.

The crystalline lens (420, *b*) is enclosed in a transparent capsule, and consists of transparent matter, which increases in density and in its refractive power, proceeding from its external surface inwards, and from its edges to its centre. The vitreous humour fills the posterior compartment of the eye (420, *cc*) behind the crystalline, and constitutes by far the largest part of the internal cavity. This is not in immediate contact with the retina, being enclosed in a fine transparent membrane called the *hyaloid* (420, ^{9}). The eyelids are not in immediate contact with the sclerotic or the cornea. A fine mucous membrane, called the *conjunctiva*, which lines their inner surface, is reflected over the fore part of the sclerotic and the anterior surface of the cornea. A part of this membrane is shown in section at 420, ^{1}. The eyebrows and other accessories are provided for the protection and preservation of the organ of vision. The eyebrows across the edge of the projecting part of the forehead catch the sweat descending from above, and prevent it from falling on the eyes, and aid in shading the eyes from

too intense light from above. The eyelids are movable screens, made so as to cover the eye or leave it exposed, as occasion may require. Glands are provided, by which all the parts which move in contact one with another are kept constantly lubricated.

The motor apparatus, by means of which the optic axis can be directed at will within definite limits to surrounding objects, consists of muscles inserted at various points of the sclerotica, and having their origin in the bones of the socket. These muscles are acted upon by a corresponding system of nerves.

The motions thus imparted to the eyeball are facilitated by a lubricating fluid secreted by a gland, called the lachrymal gland, placed over the eyeball. This fluid is continually spread upon the surface of the sclerotic by the motion of the eyelids in winking.

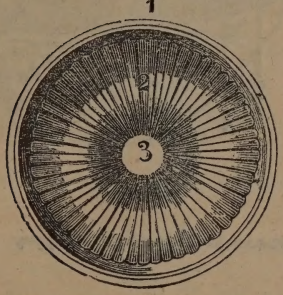


Fig. 421.

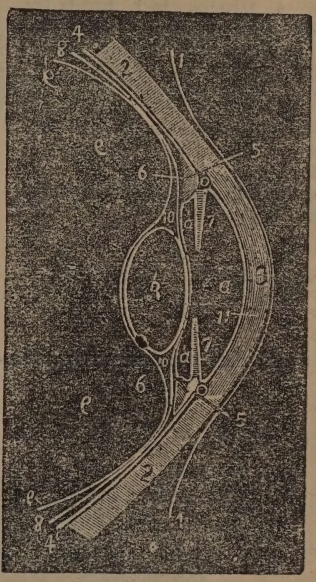


Fig. 420.

In fig. 422 the motor muscles and the lachrymal gland of the right eye are shown by the removal of the lateral bony parts of the external side of the socket.

Lock-jaw or tetanus will probably be cured by persevering in the following bath numbers: 115¾, 81, 169 with 141, 153, 98 with mustard foot bath, 137, 114, 169.

Stoppage of Urine.—Immediately give 138, and rub the whole trunk of body as hard as can be borne without pain with towel and cold water whilst in 138; but if pain, then prepare 231 whilst the patient remains in 138. Continue in 231 till full relief for several times has been obtained. Each time when passing the urine sit over boiling water, so that the steam may prevent pain. If 231 cannot be applied, 98 or 93 must be attended to, but still use 138 first and repeat 138 as needed afterwards.

J J

1. Muscle which raises the eyelid. The tendinous expansion of this muscle has been cut away to display the palpebral portion of the lachrymal gland covered by it. 2. Muscle which directs the optic axis upwards. 3. Muscle which directs the axis outwards. 4. Muscle which directs the axis downwards. 5. Muscle of unascertained use. 6. Orbital part of lachrymal gland. 7. Palpebral part traversed by four ducts of orbital part, and sending into these small ducts or canalicules. 8, 8. Accessory ducts proceeding exclusively from the superior border of the palpebral part. 9. Another accessory duct with three lobules.

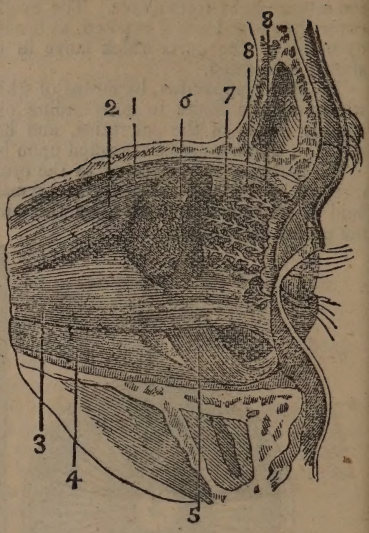
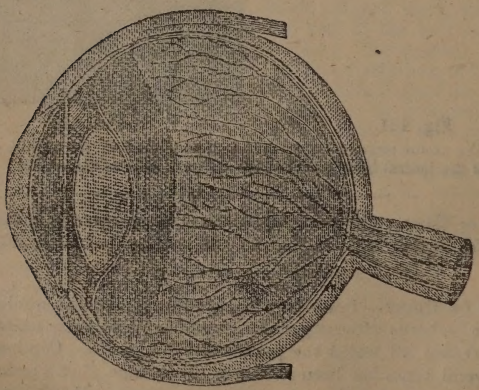
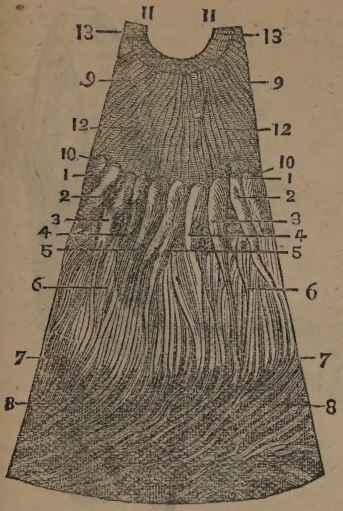


Fig. 422.

MOTOR MUSCLES AND LACHRYMAL GLAND OF RIGHT EYE.—*Sappey*



VERTICAL SECTION OF THE LEFT EYE.—*Sappey*



1 to 5. Ciliary processes. 4. Bifurcated process. 6. Veins ramifying from summits. 7. Festooned border of choroid. 8. Veins of choroid. 10, 11. Borders of iris. 12. Radiating fibres of iris. 13. Circular fibres.

SEGMENT OF IRIS MAGNIFIED.—*Sappey.*

The following is a short extract, and two cuts, from Lardner:—

The Ear consists of three distinct compartments, differing extremely from each other in their form. They are named by anatomists according to their order—proceeding from without inwards—the *external, middle,* and *internal* ear. *The External Ear.*—The part of this division of the organ visible on the outside of the skull, behind the joint of the lower jaw, is called the *pinna* or *auricle.* Proceeding inwards from the concha, the remainder of the external ear is a tube something more than an inch long, the diameter of which becomes rapidly smaller; its calibre is least about the middle of its length, being slightly augmented between that point and its connexion with the middle ear. Its section is everywhere elliptical, but in the external half the greater diameter of the ellipse is vertical, and in the internal, horizontal. This tube does not proceed straight onwards, but is twisted so that the distance from the concha to the point where it enters the middle ear is less than the total length of the tube. The external part of the tube is cartilaginous like the external ear, but its internal part is bony; the bony surface, however, being lined by a prolongation of the skin of the auricle. *Membrane of Tympanum.*—The internal extremity of this tube is inserted into an opening leading into the middle ear, which is inclined to the axis of the tube at an angle of about 45°. Over this opening, which is slightly oval, an elastic membrane, called the *membrane of the tympanum,* is tightly stretched, like parchment on the head of a drum. In Fig. 435 the several parts of the ear are shown divested of the surrounding bony matter; and to render their arrangement more distinct, they are exhibited upon an enlarged scale. The concha, with the tube leading inwards from it, marked *a,* terminates at the inner end, as already stated, in the tense membrane of the tympanum placed obliquely to the axis of the tube. The resemblance of this tube and the concha to the speaking or hearing trumpet is evident, and the physical purposes which it fulfils are obviously the same, being those of collecting an

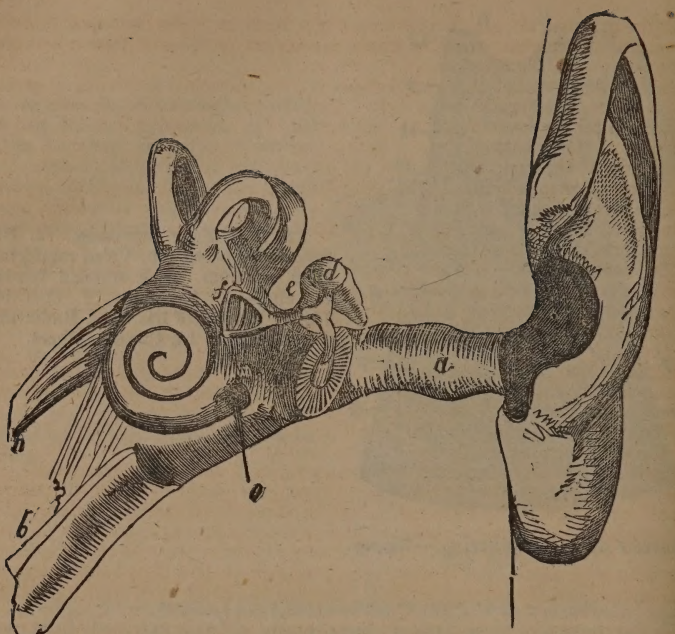


Fig. 435.

conducting the sonorous undulations to the membrane of the tympanum, which will vibrate sympathetically with them.

The Middle Ear is a cavity surrounded by walls of bone, which, however, are removed in Fig. 435, to render visible its internal structure. An opening corresponding to the membrane of the tympanum is made in the external wall, and the external part of the inner ear shown in the figure is part of its inner wall. The inner and outer walls of this cavity are very close together; but the cavity measures, vertically as well as horizontally, about half-an-inch, so that it may be regarded as resembling the sounding-board of a musical instrument, composed of two flat surfaces, placed close and nearly parallel to each other, the superficial extent of which is considerable compared with their distance asunder. This cavity is kept constantly filled with air, which enters it through a tube, *b*, called the *Eustachian tube*, opening into the pharynx, and forming part of the respiratory passages behind the mouth. Without such a means of keeping the cavity supplied with air, having a pressure always equal to that of the atmosphere, one or other of two injuries must have ensued; either the air in the cavity, having a temperature considerably above that of the external air, would acquire a proportionally increased pressure, which would give undue tension to the membrane of the tympanum, and perhaps rupture it, or the air confined in the cavity would be gradually absorbed by its walls, and would consequently be rarefied, in which case the pressure of the external atmosphere, being greater than that of the air in the cavity, would force the membrane of the tympanum inward, and ultimately break it. By means of the Eustachian tube, however, a permanent equilibrium is maintained between the air in the cavity

and the external air, just as is the case in a drum, or in the sounding-board of a musical instrument, where apertures are always provided to form a free communication with the external air.

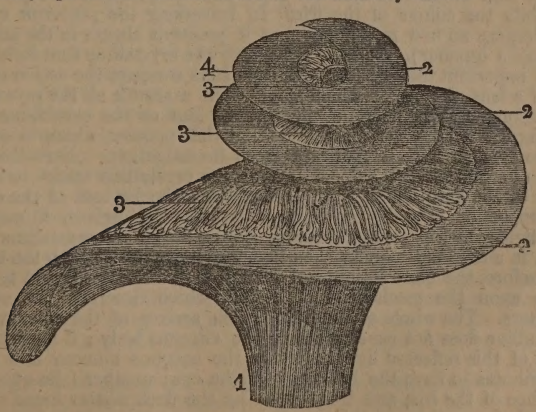
In the inner wall of this cavity there are two principal foramina, a greater and a lesser; the former being called, from its oval shape, the *fenestra ovalis*, and the latter the *fenestra rotunda;* the former is shown at *f*, in Fig. 435, and the latter at *o*. Over both of these, elastic membranes are tightly stretched, as the membrane of the tympanum is over the inner end of the external meatus.

Between the membrane of the tympanum and the membrane of the fenestra ovalis there is a chain, consisting of three, and in the young of four, small bones articulated together, and moved by muscles having their origin in the bones which form the walls of the cavity.

The Internal Ear.—We now come to consider the internal ear, which is, in fact, the true and only organ of the sense of hearing, the external and middle ears being merely accessories by which the sonorous undulations are propagated to the fluids included in the cavities of the internal ear.

The internal ear is a most curious and, as it must be acknowledged, unintelligible organ, also called, from its complicated structure, the *labyrinth*. Its channels and cavities are curved and excavated in the hardest mass of bone found in the whole body, called the *petrous* or bony part of the skull.

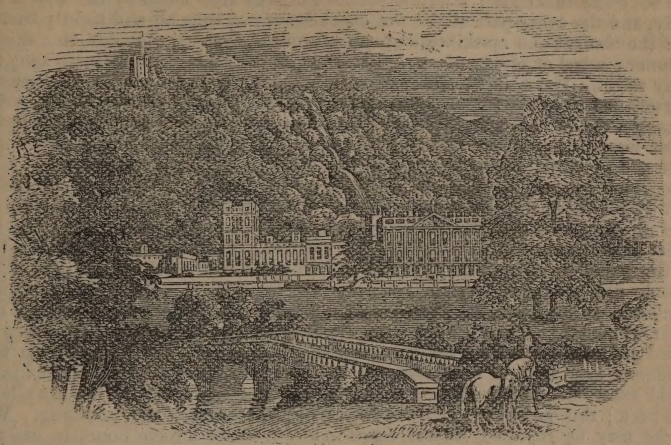
Within the three semicircular canals are included flexible membranous tubes of the same form, called the *membranous canals*. These include within them the branches of the auditory nerve, which pass through the semicircular canals, and they are distended by a specific liquid called *endolymph*, in which the nervous fibres are bathed. The bony canals around these membranous canals are filled with another liquid, called *perilymph*, which also fills the cavities of the vestibule and the cochlea. It appears, therefore, that all the cavities of the internal ear are filled with liquid, and it must, accordingly, be by this liquid that the sonorous undulations are propagated to the fibres of the auditory nerves. The liquid being incompressible, the pulsations imparted either by the auricular chain of bones, or by the air included in the cavity of the middle ear, or by both of these, to the membranes which cover the fenestra ovalis and the fenestra rotunda, are received by the liquid perilymph within these membranes, and propagated by it and the endolymph to the various fibres of the auditory nerve.



PERSPECTIVE VIEW OF THE SPIRAL LAMINA, WITH THE FILAMENTS OF THE AUDITORY NERVE UPON IT, DIVESTED OF THE COCHLEA.—*Sappey.*

VISION. The function which enables us to perceive the magnitude, figure, colour, distance, &c. of bodies.—The organs which compose the apparatus of vision enter into action under the influence of a particular excitant, or stimulus, called *light*. The properties of light, and the laws which regulate its movements, form the objects of the science of optics. In presenting the following account of the mechanism and conditions of vision, we must presume the reader to be acquainted with the principles of optics, and with the anatomical structure of the eye and its appendages. An explanation of the former would be foreign to the scope of this dictionary; an account of the latter is given under the head *Oculus*.

Mechanism of Vision.—In order the better to explain the action of light in the eye, let us suppose a luminous cone commencing in a point placed in the prolongation of the *anterio-posterior axis* of the eye. We see that only the light which falls upon the cornea can be useful for vision; that which falls on the white of the eye, the eyelids, and eyelashes, contributes nothing: it is reflected by those parts differently according to their colour. The cornea itself does not receive the light on its whole extent; for it is generally covered in part by the border of the eyelids. The cornea having a fine polish on its surface, as soon as the light reaches it, part of it is reflected, which contributes to form the brilliancy of the eye. The same reflected light forms the images which one sees behind the cornea. In this case the cornea acts as a convex mirror. The form of the cornea indicates the influence it should have upon the light which enters the eye: on account of its thickness, it only causes the rays to converge a little towards the axis of the pencil; in other words, it increases the intensity of the light which penetrates into the anterior chamber. The rays, in traversing the cornea, pass from a more rare to a denser medium; consequently they ought to converge from the perpendicular towards the point of contact. If, on entering into the anterior chamber, they passed out again, they would diverge as much from the perpendicular as they had converged before; and would, therefore, assume their former divergence; but as they enter into the aqueous humour, which is a medium more refractive than air, they incline less from the perpendicular, and, consequently, diverge less than if they had passed back into the air. Of all the light transmitted to the anterior chamber, only that which passes the pupil can be of use to vision: all that which falls upon the iris is reflected, returns through the cornea, and exhibits the colour of the iris. In traversing the posterior chamber the light undergoes no new modification, as it proceeds always in the same medium (the aqueous humour). It is in traversing the crystalline that light undergoes the most important modification. Philosophers compare the action of this body to that of a lens, the use of which would be to assemble all the rays of any cone of light upon a certain point of the retina. But as the crystalline is very far from being like a lens, we merely mention this opinion, which is generally received, to remark that it merits a fresh investigation. Everything positive which can be said on the subject is that the crystalline ought to increase the intensity of the light which is directed towards the bottom of the eye with an energy proportionate to the convexity of its posterior surface. It may be added, that the light which passes near the circumference of the crystalline is probably reflected in a different manner from that which passes through the centre; and that, therefore, the contraction and dilatation of the pupil ought to possess an influence upon the mechanism of vision, which deserves the attention of philosophers. The whole of the light which arrives at the anterior surface of the crystalline does not penetrate into the vitreous body; it is partly reflected. One part of this reflected light traverses the aqueous humour and the cornea, and contributes to form the brilliancy of the eye; another falls upon the posterior surface of the iris, and is absorbed by the dark matter found there. It is probable that something of this sort happens at every one of the strata or layers which forms the crystalline. The vitreous body possesses a less refractive power than the crystalline



CHATSWORTH, THE SEAT OF THE DUKE OF DEVONSHIRE.

BATHS AND PRACTICE OF HYDROPATHY.

WITH ILLUSTRATIONS.

THE DRIPPING SHEET.—Take a linen or coarse cotton sheet, and dip it in water; the patient, undressed, puts it on the same way as a cloak, leaving the head out, and rubbing the body well from one to two minutes, the chest first. Then, after dipping the feet in cold water, put on a dry sheet, in a similar way, and well dry the body, and dress immediately. Very delicate persons may rub the body with a dry blanket instead of, or after, the sheet. For very delicate patients, the water may be sixty or seventy degrees, but cold is generally the best; when dressed, drink a little cold water and take exercise. Another method is to have a sheet dipped in warm or hot water first applied, and then followed with one cold, or nearly so. If liable to determination of blood to the head, or the vital power be low, the patient should stand in a foot-bath of hot water while going through the process. It cannot be too well known that all violent shocks to the system should be avoided. The dripping sheet will be found a good tonic application for a fatigued system, and a very safe and mild remedy, as the cold sheet quickly becomes warm on the body, and causes a general glow through the frame. Two cold dripping sheets, one after the other, when they can be borne, are very refreshing. Sponging the head with cold water before having the dripping sheet, or a wet cloth put round the head, is useful in cases of stout persons. (Any of the baths may be taken not only without danger when the body is in a state of perspiration, but with more advantage.)

WET PACK.—Spread a mackintosh sheet, or thick quilt, on a mattress, and over that one or two dry blankets; then take a thick cotton or linen sheet, (coarse cotton, which is best, may be bought for about 4s. per pair), dip it in cold water, and wring the water out as much as possible. This is best done by two persons, the sheet being doubled, one taking hold of each end and twisting

whilst any water can be got out. The patient undressed lies down upon the back on the wet sheet, holding up the arms while one side of it is thrown over the body and tucked in; then the patient puts the arms down by the side of the body, and the other part of the wet sheet is thrown over all and tightly tucked in: the blanket and mackintosh are then brought over, on each side, in a similar manner; a bed or plenty of clothes is next put on the patient, so as to keep the body warm. Put a small pillow on each shoulder, or more clothes, to keep the warmth better in about the throat and shoulders. In case of sore throat, wring a napkin out of cold water, double it into fourfold, lengthwise, and before lying down wrap it round the throat, over which put a length of flannel, one and a half or two yards, then lie down on the sheet and go on with packing. It is important, in packing, that the sheet be well wrung out,* that the patient be tightly packed in the sheet and blanket, with the bed or plenty of clothes on, and the wet sheet and blanket closed round the shoulders and neck. The wet sheet must not be left in a lump about the feet. It is better to wrap the legs to the knees in a dry blanket before winding the wet sheet round; and if the feet do not get warm, apply a hot-water bottle to them. After being in pack one hour, or one hour and a quarter, take a tepid dripping sheet or 14 Bath list, after which a dry sheet or 19 rubbing sheet at 70 degrees, if delicate, standing on a hot pad or in hot water for the dripping sheet; dress quickly, and then take moderate exercise. A good addition to these directions is to dip a napkin in tepid water, and after wringing the water out, wrap it round the head while in the pack; this prevents any tendency to headache, and is very soothing. Wet packs may be repeated several times in the space of twelve hours in cases of fever, cold, constipation, inflammation, or violent bilious attacks. In cases of scarlet or typhus fever, the sheet should be wrung out of hot water. In cold, or ordinary stomach disorder, I find no plan so efficacious as 50 or 46 given every day or every other day. We now mostly use the fomenting-can in packing, filling it with hot water, and laying it on the blanket over the chest and bowels; this aids the progress and good effect of the pack. Wet sheet packing should not be used by delicate persons with low power of reaction. Fomenting or towel pack, as under, is far better in such cases. Still there is no process so efficacious as wet packing for bilious attacks, bad cold, indigestion, and constipation of bowels; and if the body be too low for reaction, and a person remains cold after a pack, a steam bath, hot bath, or hot sheet, followed by a tepid sheet, will soon restore the animal heat.

Some persons will naturally shrink, from feelings of delicacy, in adopting this treatment; but a pack may be managed without any unpleasant exposure of the body, by having the blanket and wet sheet over it laid on the mattress, the attendant then to retire, or turn aside, whilst the person undresses, and lies down on the back upon the wet sheet, and pulls one side over the body; the packing can then be proceeded with. All the baths may, with a little management, be gone through without any indelicate exposure.

SOOTHING FEVER PACK.—Use two towels instead of the wet sheet, one below and the other above; after the patient has been in pack ten minutes, take the towels out, and have two other towels wrung out of cold water, to replace them; wipe the body with wet cloth; go on replacing the towels every ten or fifteen minutes for one or two hours, sipping cold water during the time; then take a shallow bath, or tepid dripping sheet. This reduces fever rapidly. See 221 Bath list more particulars.

The above we apply in delicate cases, or where the patient is very low in vital power, allowing the towels to remain without replacing for one hour, and following with dripping sheet or shallow bath, 70 degrees.

DRY RUBBING.—This is an important application, especially where the

* I use a pair of rollers in a frame.

vital power is too low to bear much application of vapour baths, fomentation, packing, &c. We can get surface circulation by this process when we dare not attempt any other mode, and in all cases, whether the vital action is strong or feeble, it is highly beneficial, especially if the operator is strong and in good health, as he communicates a good deal of vital electricity. At Dr. Elliotson's Mesmeric Institution, London, they profess, and I believe with truth, to restore or relieve cases solely by this plan. For ordinary dry rubbing let the patient stand on a hot pad, or in hot water, and have a blanket thrown over the body, leaving the head out; rub the body under the blanket for ten minutes. If vital power be very low, as in some cases of consumption and liver disease, we rub with a little dry mustard, and leave the mustard on till the next bath.

TOWEL RUBBING.—A plan for moderating the application of the dripping sheet, or where the person cannot rise out of bed, is to spread mackintosh and blanket under the patient; then take a towel, dipped in cold or tepid water, according to the strength of the patient, slightly wrung out, with which gently rub the upper part of the body, and dry it: then cover that part, and do the same to the other portions of the body.

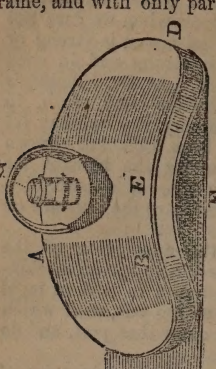
PACKING LIMBS ONLY.—This we practise a good deal in cases of rheumatism, dropsy, inflammation, paralysis, or numbness of limbs, by taking a strip of swan's-down calico, five or six inches broad, wrung out of cold or tepid water, and wrapping it round the limb, then a strip of mackintosh, and then strips of flannel, two thicknesses over all. Re-wet the bandages every two or three hours, at same time sponging the limb with tepid water, and keeping the pack on night and day until it produces what is called crisis: continue this until the crisis is fully out; then treat the crisis by putting a piece of linen loosely round, and sponge after with tepid water. This does wonders in expelling morbid matter and restoring vitality. Varicose veins are by this process entirely cured. We use also a wrapper, made similar to half a pair of pantaloons, inside two thicknesses of thick cotton, next a covering of flannel, and next mackintosh, the cotton wrung out of tepid water; a dry flannel wrapper over all this is worn night and day, and very efficacious in sciatica cases. Or 195½ bath list.

DRY PACK.—Lay two or three blankets on a mattress; the patient then lies down upon them undressed, and is packed in the same way as in the wet sheet pack; a piece of mackintosh cloth placed under the blankets, and wrapped round the body over the blankets, is more certain to produce perspiration. The patient should remain in, after the perspiration has begun, from fifteen to twenty minutes, and afterwards take a dripping sheet, or cold shallow bath. Whilst in the pack a wet cloth should be kept on round the head, and a tumbler of cold water taken. The dry pack is to produce a greater degree of perspiration, and is useful in chronic rheumatism, or chronic liver cases; but from the length of time required in most cases we do not often use it, preferring the spirit lamp.

FOMENTATION.—This is a very beneficial application which we have adopted. First, spread a mackintosh sheet on the bed, then two blankets, on which the person, with only the trunk part of the body undressed, or wholly undressed, is laid; one of the fomenting flannels, previously wrung out of hot water, is placed under the back, and another over the chest and bowels; then bring one side of the blanket over, put the arms down, then lay the hot can on, and put the other side of the blanket over, then the mackintosh; the person lies quietly from three quarters to one hour, and will often go to sleep. Afterwards wipe the trunk with a towel wrung out of cold water, and dress, or have a cold dripping sheet, or cold or tepid wash over.

This application is very mild and efficacious in chest, liver, and stomach affections, and may be frequently used without any danger of weakening the

frame, and with only partially undressing. A wet towel round the head, with the feet in flannel, and sipping cold water, is used in some delicate cases. The fomenting flannels are each made of six thicknesses of flannel, twenty-one inches square, and quilted to keep them straight.



HALF CHEST FOMENT CAN.
One in. thick; A to B, 9½; C to D, 12½; E to F, 3; G, Plug.

The use of this fomenting-can would often prevent serious illness, and is a perfectly safe stimulant and counter-irritant, drawing blood to the surface, and thereby relieving internal congestion, the cause of so much mischief. Hot mustard and water foot and hand baths repeated, we find do wonders in relieving congestion, and no harm can possibly arise from their frequent application. (See cut.)

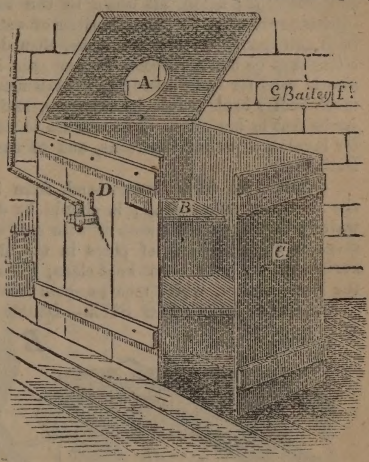
DRY FOMENTATION FOR BOWEL COMPLAINT.—First put the legs in hot mustard and water fifteen minutes, then lie down in bed wrapped in two dry blankets, and have the hot can over the bowels under the first blanket for half an hour or more, and no wash after. The horizontal position should be kept as much as possible in this complaint. (See page 75.)

VAPOUR BATH.—The patient, undressed, sits on a chair, a blanket is put round, covering the whole person in the chair, leaving out the head; then coverlids or rugs, or anything of the kind, are put over the blanket. Take care to close the cloths well round the throat, and let them fall on the floor so as to keep in the steam. Then take about a gallon of boiling water in a pan, put a hot brick or a piece of hot iron, or hot cokes, in the water, place the vessel under the chair, closing the clothes well up, and perspiration will soon be produced. During the baths some cold water should be taken by sips, and the forehead bathed with cold water with a cloth or sponge. After the patient has perspired about ten or fifteen minutes, all the cloths must be thrown off, and a cold dripping sheet or shallow bath given. The heat should not be strong at first, and this is easily regulated by raising the blanket a little from the floor for a short time. The feet in a pan of hot water, and a napkin wrung out of cold water, frequently renewed, held to the head, prevent headache. This bath is very useful in all cases of over-fatigue and chilliness of the frame, and may be used, with great advantage in keeping the body in order, morning, noon, or evening: for rheumatism and paralysis it is very efficacious. At my Establishment I use a box for the purpose, into which steam is conveyed from a boiler, and such boxes my carpenter will supply to any one on application. Patients may soap themselves in these vapour baths to advantage. I use this bath several morning or evenings, five minutes, for weeks without any weakening effects. (See page 579, "Portable Steamer.")

SPIRIT LAMP.—This is given in the same way and followed by the sheet or bath, as used after the vapour bath, only instead of the hot water and brick, a lighted lamp, or saucer, containing spirits of wine, or rectified spirits of naphtha, which is cheaper and quite as good, is put under the chair. I use gas at my Free Hospital. This bath is of great use in reducing fat and hardening the muscles. I have reduced a patient sixteen pounds in nine days, and brought him, from, a state bordering upon apoplexy, to walk ten miles without fatigue, taking away all uncomfortable feelings, especially in the head. With perfect safety it may be used once a day, for a week or more. In the forenoon, or afternoon, is the best time. A wet cloth should be put round the head, and a tumbler or more of cold water administered by sips during the application, and the feet placed in a pan of hot water; a napkin wrung out of cold should be held to the stomach while in the bath, and re-wetted: in cases of venous apoplexy it is very efficient, used with caution. This bath is also useful in first stages of dropsy, and chronic liver disease, and is not weakening. A mackintosh, or coarse

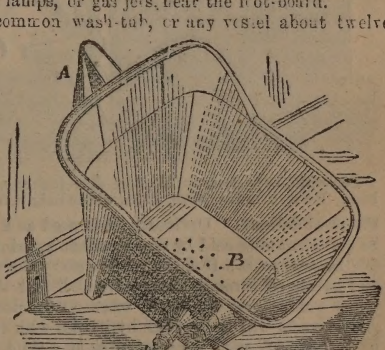
linen or calico petticoat, oiled with boiled linseed oil, to make it air-tight, is very suitable for the steam bath or spirit lamp. It should be 60 inches long, 72 inches wide at the bottom, and 36 inches at the top, with a hole for the head, having a narrow piece of calico and a string to draw round the throat. When the patient is seated undressed on the chair, put the petticoat over the person without any blanket, and the hot brick and water, or spirit lamp, underneath. A blanket is useful to be laid on the floor round the petticoat to keep the heat in. I supply the mackintosh petticoats to patients, and they can be made so as to serve for wet packing as well. I had one made for a major in the army to take about with him.

STEAM BOX.—Used also for Spirit Lamp. B is the seat the person sits upon, then close the door C, and put down the lid, the head going through the hole A, 12 inches in diameter; 4 feet high, 29 inches wide, 34 inches in depth from back to front, outside measure. Put a towel round the top of the lid at A, to keep in the steam; sip cold water; have a wet napkin round the head, and the feet in hot water. D is a steam pipe, with a handle outside and a handle inside, for the bather to alter the force of steam at pleasure. The steam is sent in under the seat, and on the front of the seat hanging down to the foot-board is a curtain of mackintosh or linen, to keep the force of the steam from the legs This bath is used from five to ten minutes, or in some cases fifteen minutes, and after it a tepid dripping sheet, or a tepid sponge. A fomenting pad wrung out of hot water, and held to the stomach and bowels while in, is useful in some cases, and soap the body well.



For spirit lamp introduce two spirit lamps, or gas jets, near the foot-board.

SITTING OR SITZ BATH.—A common wash-tub, or any vessel about twelve inches deep, will do. Put water in to the depth of five or six inches; sit down in it covering the person over with a blanket, either leaving out the head or not. Entire covering keeps in the bodily heat better when the person is wholly undressed. It may be managed without entirely undressing; gentlemen only taking off the coat and vest, letting down the trowsers, and drawing a sheet between the legs. I have invented a running sitz, which can be used either as an ordinary one, or as a running sitz with a small quantity of water, by taking off the screw at D, or having it to the depth of C, pouring in water at A, the water coming in at B, and running off at C. A cold sitz bath for six minutes, or running cold from two to four minutes, is very refreshing after fatigue or mental exertion; and the habitual use of it, as often as convenient, will tend to



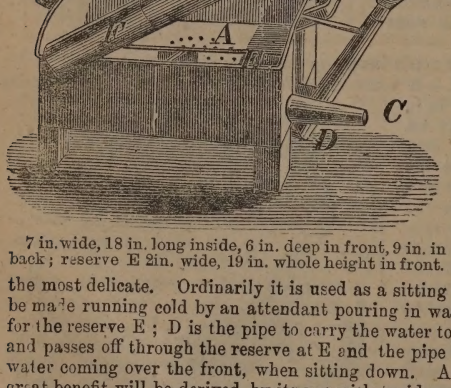
12 inches deep in front, 16 inches back, 14 inches square in bottom inside, 21 inches width in front and back.

produce good action of the bowels and healthily brace the nerves of the spine and brain. For constipation, 78½, 168¾, 220, 172, 69, 46. For piles, the water should be from sixty-five to seventy degrees for ten minutes, and afterwards cold for a minute, wearing a wet body bandage night and day. (168¾, 172, Bath list.)

WASHING SITZ.—This bath is the most convenient for ordinary use, or when travelling. I have some water put in over night, and on rising I spread my mackintosh sheet on the floor, set the bath in the centre; holding the head over the bath, squeeze water from the sponge over the back of the head and the face, sit in it two minutes, with the feet out, body covered with a blanket, then rise and soap the body well over with common yellow soap rubbed on a small flannel pad, standing in hot water, or not, as convenient; again, sit down in the bath, and, with a sponge, sponge the body, squeezing from the sponge quantities of water over the shoulders; then stand up in the bath and sponge the legs and arms, then dry with a coarse linen or cotton sheet; the latter may be had for about 4s. per pair at any draper's shop, and are such as are mostly used for bed covering by the labouring class; if the body is dried with a napkin, much bodily heat is lost by exposure, and which often does injury. I generally prescribe feet in hot water, or sometimes in hot mustard and water, while sitting in bath, for invalids or delicate persons, and to dash them in cold water on rising. (See 95 Bath list.)

I cannot too highly recommend, from its good effects, soaping the body well with the common yellow soap; it should be done very frequently, and standing in hot water; then sponge the soap off with cold water, which renders it quite a luxury. The seven or eight millions of pores in the skin discharge the waste matter, and if the surface of the skin is not kept clean, the absorbents, as I have remarked, take back the waste matter, which returns again into the blood, causing incalculable mischief.

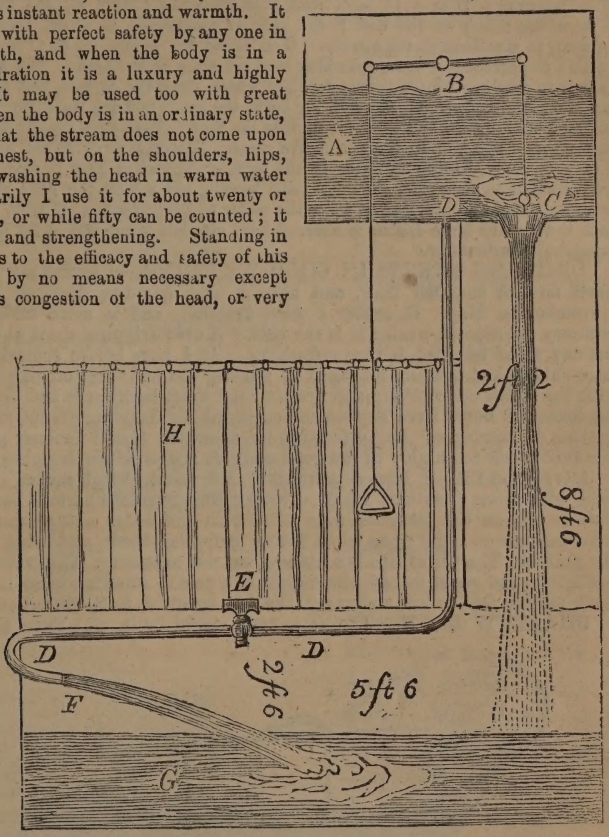
LADIES' RUNNING SITZ.—Double a dry sheet, and lay it over the front of the bath F, and sit upon it, and when rising, draw it round the legs to dry with. I have invented this bath, which can be used without any undressing. It should be in every lady's room, and if used as commonly as the wash-hand basin would prevent weakness of the spine and the long list of distressing weakening ailments to which all females are liable. It has saved lives already by stopping hæmorrhage, which no other means made use of could effect. For this purpose it is used every one or two hours, two minutes at a time, with cold water; and this may be done with safety by the most delicate. Ordinarily it is used as a sitting bath, for a few minutes, and may be made running cold by an attendant pouring in water at the funnel B; F is the cover for the reserve E; D is the pipe to carry the water to A, where it rises up in the centre, and passes off through the reserve at E and the pipe C. The reserve is to prevent the water coming over the front, when sitting down. After walking or becoming heated, great benefit will be derived by its use with tepid water. For piles, the water should be 65° to 70°, used a few minutes at a time, and one minute cold, wearing wet body bandage night and day, as before mentioned, and if bandage not warm, put flannel over, especially at night.



7 in. wide, 18 in. long inside, 6 in. deep in front, 9 in. in back; reserve E 2in. wide, 19 in. whole height in front.

DOUCHE BATHS.—There are various modifications of these applications; the principal is the one which, from a cistern, containing from one to two hundred gallons of water, a short tapering pipe contracted to 1¼ inch at the point, or lower aperture, with a valve inside the cistern, worked by a lever, allows the water to fall with con-

siderable force from a height of from eight to twelve feet. This bath is one of great service in many cases, and for ordinary use it is far more efficacious than the shower bath, causing less shock, as the water, as soon as it touches the back, shoulders, and hips, produces instant reaction and warmth. It may be used with perfect safety by any one in ordinary health, and when the body is in a state of perspiration it is a luxury and highly beneficial. It may be used too with great advantage when the body is in an ordinary state, taking care that the stream does not come upon the head or chest, but on the shoulders, hips, and bowels; washing the head in warm water first. Ordinarily I use it for about twenty or thirty seconds, or while fifty can be counted; it is stimulating and strengthening. Standing in hot water adds to the efficacy and safety of this bath, but is by no means necessary except where there is congestion of the head, or very full habit.



In cases where there is any affection of the stomach or liver, a flannel pad wrung out of hot water should be previously tied round the chest, or a dry chest compress put on, and stand on a hot flannel pad, or in hot water. In cases of *Chronic Rheumatism* in the knees and ankles, the patient is wrapped in blankets covered by mackintosh or oiled cloth, and set in the bath, and the douche allowed to fall on the parts affected; this is to rouse action in the parts, and will often succeed when no other plan will. Another plan for delicate persons with affection of the spine, or rheumatism in the shoulder, is to sit in a shallow bath with the water ninety degrees, having cold water directed by a pipe from the douche or some other source on the parts affected, until the water in the bath becomes too cold for the patient to remain in. We have gutta-percha tubes attached to the main pipes or cisterns, to spout on any particular part wanting vitality; the patient being undressed, and partially enveloped in blankets.

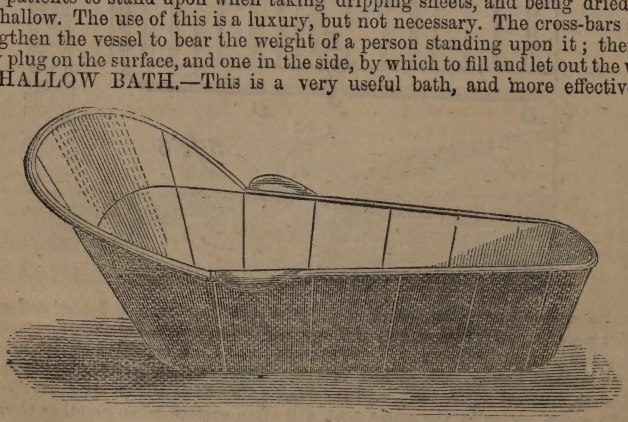
THE DOUCHE AND SHALLOW BATH COMBINED which I have for personal use is very

effective, and far superior to the common shallow. A is the cistern, to hold any quantity of water—the more water the greater force; mine holds about two hundred gallons, but fifty will do very well; B is the lever to draw the plug when the principal douche C is required; D is a $1\frac{1}{4}$ inch lead pipe from the cistern for the back douche; E is a tap; and at the end F the pipe is contracted to about three-fourths of an inch, to give force to the stream. G is about ten inches depth of water. H is a curtain to prevent the water splashing over the sides of the bath. The way I use the bath is to step in with ten inches depth of water, draw the curtain, and then turn the tap E on immediately, sit down in the bath, the spout pouring water on my back. I rub well with water, and throw it up into the face. Then turn round and let it spout on the throat and bowels, but not on the chest. The open or principal high douche C I use separately, having no water in the bath, except what runs in from the column, letting it fall on the spine, shoulders, and bowels, but not on the head or chest. A large tap should be provided to allow the water to keep running off from the shallow bath C when the large douche is used. I have also hot water laid on for a hot bath S, using cold douche after.

DRIPPING SHEETS IN COLD WEATHER.—I spread my mackintosh sheet on the chamber floor, and have a cold dripping sheet on rising, from November to May. It causes a good reaction, and is more certain, and for ordinary practice in winter it is the best. A cold dripping sheet at any time of the day when fatigued is very refreshing. As I have before remarked, it allays feverishness, and is easily managed by putting the wet sheet on like a cloak, and with the hands out rubbing and drawing the sheet backwards and forwards over the back. I never have any assistance in taking dripping sheets, or drying or putting on bandages. By performing the operation myself I sooner get reaction. I cannot speak too highly of the good and safe effects of the dripping sheet.

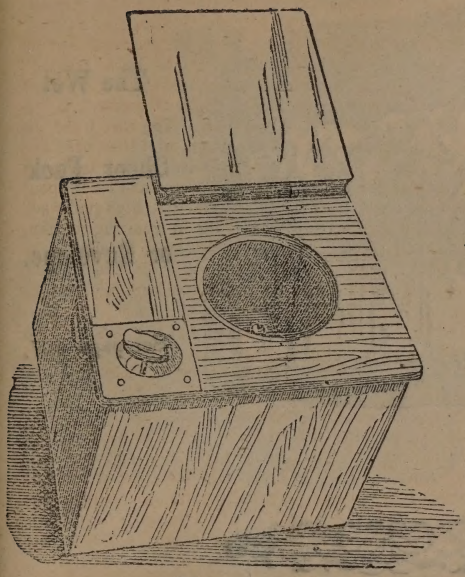
HOT PLATE.—I have a galvanized iron vessel, 4 feet square and 3 inches deep, with some cross-bars inside, dividing the space into parts 6 inches square. This is laid on the bathroom floor filled with hot water and a flannel pad over it for patients to stand upon when taking dripping sheets, and being dried after the shallow. The use of this is a luxury, but not necessary. The cross-bars are to strengthen the vessel to bear the weight of a person standing upon it; there is a screw plug on the surface, and one in the side, by which to fill and let out the water.

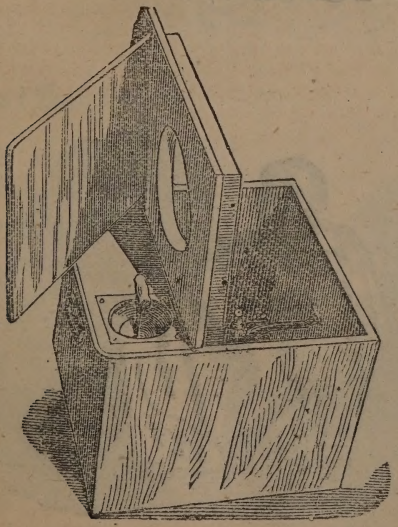
SHALLOW BATH.—This is a very useful bath, and more effective and



5 feet 6 inches long, 26 inches wide, 13 inches deep.

tonic than dripping sheet. The bather lies down in it half filled with water, and rubs quickly the legs, arms, and body; or an attendant assists if there be one. It is best for the bathers, if able, to use action in rubbing themselves well, as it aids the good effect of the bath. One or two gallons of cold water may be poured on the spine before coming out, but is not quite necessary.

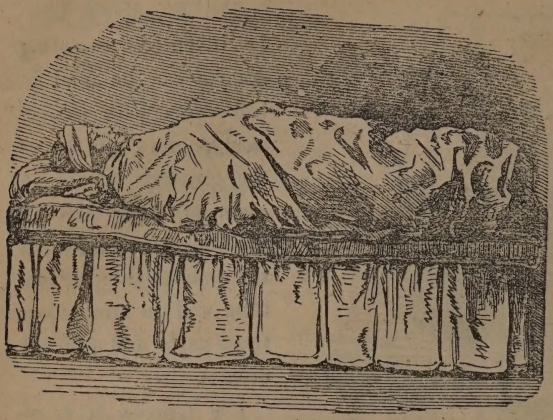




Mr. Smedley's newly invented ascending douche can be used in bed-rooms with perfect safety, and will be of the greatest service in cases of piles and of weakness or disease of the prostate gland or rectum, and to strengthen those parts and prevent disease.

For females it is of great importance, and may be used with perfect safety, the action being delicate, and can be used often without undressing.

It acts also as a slight enema very beneficially. The water need not be renewed above once a week. The pump is double action, and easily worked. Price, complete, £3 5s. To be had at Office, Lea Mills, near Derby.



The Wet Sheet Pack or Envelope.

See page 567.

The Sitz Bath.

See page 571.

The Leg Bath.

29 inches long.

9 inches back to front.

6 inches wide.

Orifice, 6½ inches.

Hand Bath in use.

Centre piece, 7 inches broad.

6¼ inches diameter.

10 inches each side piece.

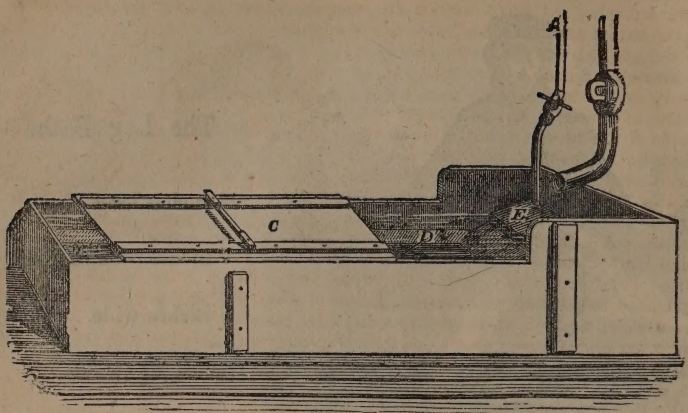
Hand and Arm Bath.

23 inches long.

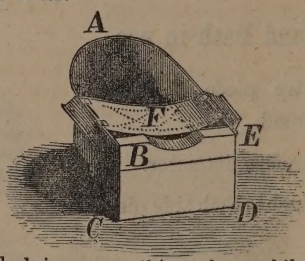
6½ inches wide.

9½ inches deep.

2 inches curve.



WOOD SHALLOW BATH, such as I use at my Establishment and Free Hospital, is made of one-inch deal boards, grooved and tongued, not lined or painted. It holds water well, and a good deal of it, and there is more room for the bather to lie at ease and soap well. Outside measure, 6 feet 5 inches long, 27 inches wide, and 17 inches deep. E is a flat board, 4 inches broad, to lay the back of the head upon, and it slopes down into the bath to support the back. C is a loose cover, merely put on to avoid exposure of the person. A is a steam or hot-water pipe, which is carried round the bottom of the bath under a board, for a hot bath. B is a 1½-inch pipe brought to 1¼-inch for a back douche, and to fill the bath. A plug at the corner lets out the water.

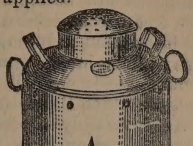


HEAD BATH.—An excellent application for soothing and cooling the head. The person lies down on the floor with a pillow under the top of the shoulder and the back of the head laid on at F, which is a piece of perforated zinc, connected with the sides of the bath by elastic straps, the head is pressed down into the water put into the bath. Where there is much excitement of brain, the water should not be quite cold, and often renewed, as it soon becomes warm. For extracting heat from the head, it may be used from twenty to thirty minutes at a time, and not unfrequently brings a soothing sleep while being applied. The forehead should be sponged at the time with the same water; or a cloth frequently re-wetted, and laid upon the forehead for a few minutes. A cold foot bath, after a head bath, is good for reaction. (See 131½.)

The HEAD BATH is 10 inches wide at C D, 13 inches long at B A, and 6 inches deep inside. B is a reserve, 1 inch wide, with a loose cover, to hold any water that may slop over, and so keep it from running down the bath. A tap should be inserted into the reserve at E, so as to let water run through on pouring more in to keep the water cool; a round dish, three inches deep and twelve inches diameter, will do very well.

FOOT BATHS.—Walk about in cold water at a depth of five or six inches, or standing in a tub, stamping with the feet from two to five minutes; then rub them dry and take exercise.

CHEAP USEFUL STEAMER.—A separate gutta-percha tube is attached for local steaming, of great service in wounds, abscesses, chronic rheumatism of joints, throat affections, and all is easily applied.



STEAM AND SPIRIT LAMP BATH.—A, 5½ diameter, 8 deep to first rim. D, 1¾, B, 4½ deep; this sloping part holds a quart of water. C, perforated top. Inside A is a movable can, 3½ diameter, 2¼ deep, to hold a quarter pint of methylated spirits of wine, or rectified naptha, to place inside A; light the spirits, then put in can, C D, with sloping point B into the spirits. If for spirit lamp, leave out C D B, put the little cover inside on spirit can, with two wicks. The person undressed, enveloped in blankets, or coverlids, or mackintosh, sits on a wooden-bottom chair, the steamer under. If at any time too hot, raise the blanket to let in air, or to make the spirits burn better. After steaming, sponge over with cold or tepid water (see p. 570).

ETNA, for heating cocoa or tea, very useful. On rising, put a full dessert-spoonful of rectified spirit of naptha—or, what is better, methylated spirits of wine—into the channel round the bottom of the can; set it on fire with a match, having previously put into the can the liquid to be heated. Cocoa stewed from nibs is best; never buy ground cocoa of any kind. Heat them in the oven an hour or two, then stew them in water three or four hours; as much may be done as will last two or three days. The methylated spirits of wine is about 4s. per gallon, and is best in a half-pint glass bottle.

3¾ in. whole height.
5½ wide in top.
4 in bottom of stand.
To hold a quart.

Eye and ear douche we find very useful. Savory & Moore, inventors, 220, Regent Street, London; or through any chemist.

EYE BATH.—Eye glasses are sold at the druggists', the application of them is as follows:—For weak sight without inflammation, fill the glasses with water 60 degrees and keep a stooping position, to keep the water in. Then raise the head with the glasses fitting over the eye, and open the eyelids to allow the water to come in contact with the eyeball. Keep the glasses on five minutes, then change the water, and while changing let the eyes face the strongest light. Thus go on applying water in the same way five minutes longer, repeat this three or four times a day, after a few days use only cold water. If convenient, pack the forehead with a piece of calico wrung out of cold water, and oiled silk over during the application. Inflamed eyes treat as follows:—Use head-bath cold or rather tepid; foment the eyes and forehead for ten minutes with hot flannel pads wrung out of water as hot as can be borne while using the head-bath, then pack the forehead as above with wet calico, and apply the glasses, with water 70 degrees to commence with for three minutes, the next three minutes 60, and then three minutes cold; and in changing the water open the eyes and face the light. When the inflammation is subdued, then treat the same as for weak eyes; for accidental injury apply the same.

The patient must not be alarmed at the eyes becoming much blood-shot by the use of the glasses at first; this is producing the desired effect by stimulating the circulation, and will subside in due time. At bed-time foment the eyes with hot water five minutes, then pack as above with wet calico over the forehead, and two pieces of damp spongio over the eyes for the night. The ordinary method of shading the light from weak or inflamed eyes is highly injurious,

and often results in permanent injury. As inflammation of the eyes is often a secondary symptom, showing inflammatory action in the stomach or other viscera, diet and other precautions are absolutely necessary for recovery. Avoid all stimulants; adopt the diet recommended in this work, wearing body bandage; and take the usual cold or tepid dripping sheets, and sitting baths as for ordinary health. If there is much mucous inflammation shown by the red tongue, &c., more active general treatment will be required before the eyes can be restored to healthy action. (See Bath list 227.)

COLD FEET.—An invariably successful and perfectly safe remedy in all cases, is to put on a pair of cotton socks, wrung out of cold or tepid water, with a pair of thick lamb's wool over, and to sleep in them. Wash the feet in cold or tepid water on rising. We also apply cotton gloves wrung out of water, with dry woollen ones over, and in some cases wear them night and day; they draw circulation to the hands, to the relief of other parts. 192 to 195 Bath list.

BACK WASH.—The person sits on a board across the sitz bath, or a tub, in which is some cold water; the attendant takes a towel, dips it in the water and throws it open on the shoulders and back, drawing it downwards, and keeps renewing it in the water; apply this for two or three minutes. It is very strengthening and refreshing to the back, and a very mild application; and in case of head affection, have the feet in hot mustard and water. (See Bath list 120, 121.)

BODY BANDAGE OR WET COMPRESS.—This is our sheet anchor in most cases of disease, and also for ordinary slight affections of the stomach, bowels, or kidneys. For those in ordinary health, it may be worn or thrown off at pleasure without any risk of cold. It will keep up vital heat in the body when lowered with fatigue; or in case of having fatigue to go through, it will be found highly useful and always safe to use. (See Bath list, 163, 168¾, 174, 174, flannel ends.)

The reason why bandages are only partially used at water establishments, thus causing great delay in restoring vital action, is owing to the imperfection of those used; they often really doing more harm than good; which will be the case if a feeling of warmth is not produced by them. Body bandages can be thrown off at any time without any substitute, and without any fear of taking cold.

The body bandage is of great importance, and very beneficial in constipation of the bowels, liver, stomach, and affections of the kidneys, especially in pregnancy and internal irritation. It should be re-wetted morning and night. If there be inflammatory matter in the system, a crisis—rash or pimples—will probably come out, and so produce a good effect, thus acting as a counter-irritant. When this is the case, and the rash becomes sore, or discharges, simply attend to the crisis treatment as in this book; and should it become hot in the night, re-wet it; morning and evening wash over the parts with warm water and brown soap. This bandage will not produce a crisis or rash in a healthy system; and it is only where there is inflammatory matter in the system, which is always, dangerous its remaining in, that any crisis will be produced. It is very useful at all times in soothing the stomach, bowels, liver, and kidneys; and may be worn by public speakers and ministers, on occasions of much exertion, with great benefit; however much the bandage is worn, no injury will arise. I wear it for weeks together when I have much work to go through; and never have any rash or crisis in consequence. It also tends to allay thirst, and is used in some stone quarries and iron foundries, where the work is hot, for this purpose, and for support to the back. In cases were much medicine has been taken, the stimulating effects of the baths and bandages throw it off in the crisis, upon the non-vital organs, the legs, arms, and surface of the body; and so entirely replace the vitiated tissue by new and healthy formation. Wherever there is disease in the system, there the crisis will show itself, relieving the parts most affected. (*See Crisis Treatment, Index.*)

CHEST COMPRESS.—We use different kinds and sizes.—The shorter chest

spongio-piline* compress, with collar, is invaluable in all chest complaints, and bronchial affections, or of the lungs. The collar is made of two thicknesses of calico, covered with oiled silk and quilted.

The spongio should be bound with tape, and have two crossings of tape at the back, to keep it from stretching, and should be worn night and day until the complaint is removed. It will not weaken the chest; but, on the contrary, greatly soothe, and bring external warmth and circulation; and so relieve the internal congestion. Worn dry, or slightly sprinkled with tepid water morning and night, but not too wet, or the compress will feel cold. The 179 compress will be useful at the back, as the apex of the lungs comes up to the point betwixt the shoulder and neck. The above chest compress we ordinarily use with a body bandage and spinal compress. Sometimes, however, the body bandage cannot be used for want of vital heat, and then we find the full-size spongio chest compress, which is merely six inches longer, to be the best. Either of these chest compresses, or the calico one described below, are excellent preservatives to wear in case of exposure to cold, or on occasions of public speaking, in winter, and may be thrown aside without danger of taking cold. The half chest calico compress is made of a similar shape, but instead of spongio, there is first calico, two thicknesses next the chest, then one thickness of flannel, and outside oiled silk, lined with one thickness of calico to strengthen the silk. Some persons will find the full-size calico compress lighter to wear, and to act on the bowels as well as the chest, if they can keep it warm; but it should be observed, that if *any bandage feel cold, it will do harm, rather than benefit.* (See Bath list, 177 to 185.)

WET PACK FOR THROAT.—Many a valuable life amongst the ministers of the gospel and public speakers would be preserved by the use of this compress, saving them from bronchial disease, or consumption, by occasionally wearing it, and packing the throat at night as follows:—Take a napkin, wring it out of cold water, fold in four lengthways, wrap it round the throat, and two yards of flannel over it, or a pair of lambs'-wool drawers or flannel petticoat, if no flannel wrapper at hand; however often this is used, it will not injure or relax the throat. I always take the precaution of sleeping in it after public speaking. I have been instrumental in restoring and preserving many a valuable life by advising this application. It is well known that the majority of earnest ministers of the gospel and other public speakers become invalids, and are obliged to give up their work, from bronchitis and relaxation of the throat and uvula; packing the throat and using the respirator after sermons or lectures, would most effectually save them. I can speak from long personal experience. One point must be noticed, the flannel wrapper should be thick enough to keep a good warmth up; and in the morning sponge or wash the throat well with cold water. In obstinate sore throat or quinsey, keep it on night and day, re-wetting once or twice in the night, and every half hour in the day-time. I have known bad cases cured in twenty-four hours. Spongio-piline could be used in day-time, being, less bulky, but there must be good heat kept up. Bath No. 82, two or three hours, followed by No. 81, six or eight hours, if internal swelling, 220 to throat useful, 196.

SPINAL SLAPPING.—This we find of great use in healthily stimulating the great nervous centres in the spine and brain. In cases of congestion of brain and general nervousness, let the patient sit on a board over the sitz bath either with or without the feet being placed in mustard and water, of 100 deg. heat. The attendant then dips the hands in cold mustard and water, and applies it down the spine; gently and quickly slapping with the open hand, one hand following the other from the nape of the neck all the way down the spine: frequently dipping the hand in the mustard and water, the mustard not to be washed off, but the back wiped dry with a towel; the top of the spine should have extra rubbing. The whole operation to last from four to six minutes at a time. (See Bath list, 127.)

*Spongio piline may be bought of Wandle Felt Company, 14, Hanover Square, London, and at most druggists'.

WASHING OVER THE BOWELS.—In some obstinate cases of constipation of the bowels we order the bowels to be washed with hot soap and water and a flannel pad at bed-time for a few minutes; then to wipe the soap off, and rub a little glycerine in for five minutes; and after put on a dry flannel two or three thicknesses and sleep in it. This we have found answer when other means have failed, and especially with those far advanced in life or weak; it should be done in bed. One lady, seventy-two years of age, came for liver complaint and long constipation, and who by having this application for some weeks, with slight bathing, got entirely well, and has since enjoyed excellent health. (See also Bath List, 78½.)

RESPIRATOR.—This is a most useful invention, and may be used without any risk. It is of the utmost importance to every one going out of a warm room into a cold or damp atmosphere. If put on before leaving the warm room, a temperature of seventy or eighty degrees is breathed, which effectually prevents attacks of bronchitis, inflammation, or sore throat; and in cases of bronchial affections, I recommend its use during the night. I have seen and felt the most important benefit from this, as it is manifest there is risk either of inducing or increasing inflammatory action in the fine air-tubes and vessels of the lungs, by the sudden change of breathing a temperature one moment of seventy degrees and the next of thirty or forty degrees, and sometimes far lower. Maw & Sons, of Aldersgate-street, London, I have found the best; price 5s. each, or post free for 5s. 4d.

COD-LIVER OIL.—This I consider very beneficial where it can be taken to agree with the patient, but the large quantity almost invariably prescribed clogs the liver, and does more harm than good. (See Bath List, No. 207.)

SWEATING PROCESSES.—*Spirit Lamp, Vapour Bath, Gas jet, Hot-Water Bath, 90 to 104 deg.;* Dry Blanket Pack, Hot dripping Sheet, Foment Pack, Body and Towel Pack, Hot Sitz.

See Bath List, which gives very full directions on all these matters. Our 98 or 47 or 93, have frequently saved lives in extremity, by producing immediate action on the skin, and by their stimulating effects on the organs of nutrition; and unlike allopathic practice, give relief and stimulate without any after ill effects.

TONIC PROCESS.—Douche of various powers and length of time: cold dripping sheets, cold sitz, especially running sitz, together with cold spinal rubbings, and cold water poured down the spine, cold shallows and pail douches; towel back wash whilst sitting over sitz.

SLIGHT TONICS.—Cold mustard and water foot and hand baths; cold and tepid head baths; cold wet towel rubbing, tepid shallows with cold pail douche, tepid sitz with the feet in mustard and tepid water; and cold spinal rubbings whilst sitting on a board over sitz, having cold water poured down the spine the while; cold back wash, running sitz 70 deg. for five minutes whilst the feet are in hot water.

The following are very modified applications of the above processes for very delicate patients:—

A very gentle vapour bath for five minutes, then throw a dripping sheet over the body before coming out of the vapour box. Usual sitz 90 deg. for five minutes, soaping the parts out of the water whilst the others are in, having the feet in hot water during the time. Then wipe over all the parts, feet also, with a cold wet cloth; and then rub dry. Chest-rubbing either with cold water, mustard and water, or cod-liver oil, from two to three minutes, with the lower parts in tepid mustard and water, is good. Soaping the whole frame over with a flannel pad and warm water, and then quickly sponge it off with tepid, using very little water. Hot foot and hand bath for five minutes, then wipe them over with a wet cold cloth. Mustard and tepid foot and hand bath for five minutes, simply rubbing them dry and warm afterwards. Wet towel rubbing half and half; first doing the upper half of the body whilst in bed, and drying; then putting on the woollen vest, perform the same operation with the lower part of the body, dipping the towel in tepid water. Fomentation on the chest or bowels, warm, not hot; and then wiping over the parts fomented with a damp towel. Steaming any affected part of the body separately by means of the opening in vapour box; or by pan of hot water with hot bricks in, with the limbs placed on a narrow

board over the pan, and a blanket over all. For nervous patients this steaming is very useful, if applied to the nape of neck for a short time, keeping the head well wetted during the process. Rubbing the nape of neck with the hand, and mustard and cold water for five minutes, whilst the feet are in tepid mustard and water, is a very soothing process for nervous patients. Pouring cold water over the nape of the neck for a few minutes is very refreshing and beneficial. Mustard poultices applied to the soles of the feet, the mustard not being permitted to touch the sides of the feet, may be kept on night and day, and though not much felt at the time, yet do much good by drawing down the blood from the head and promoting general circulation. Mustard poultices also applied to nape of neck, between the shoulders, on the windpipe and front of the neck, down the chest, on the pit of the stomach, and also on the region of the liver, are very useful remedies; but in the application of mustard the skin should not be suffered to break. Wet with dry socks when worn all night are very useful in producing healthy circulation. Cod-liver oil is very generally useful when taken as before directed.

HOT DRIPPING SHEETS are very useful before the wet pack, in cases where there is low power of reaction. When coming home with wet clothes, or having been wet, and clothes dried on, a hot dripping sheet, followed by a tepid dripping sheet, is a very mild and pleasant operation, and would always prevent cold being taken; or a cold dripping sheet alone would often restore the circulation.

FOMENTING PAD IN STEAMER.—In all cases, except of full habit, a flannel fomenting pad, wrung out of hot water, held to the stomach and bowels, whilst having a steamer, is very beneficial and agreeable. In cases of full habit, a towel wrung out of cold water, held to the stomach, is best.

FOMENT PACK.—Having had this year some very bad cases of stagnation of the vital powers, I have tried with great success what we call a fomenting pack, that is, in addition to the directions for wet pack described, wring a flannel fomenting pad out of hot water, and lay it under the shoulder and back, on the blanket, and another hot pad on the front of the body; then wrap up in the wet sheet. Next bring one side of the blanket over and put on the hot fomenting can, then the other side of the blanket and the mackintosh sheet, &c., as in wet pack, followed by same application as after wet pack. (See 46, 47, Bath list.)

TRUNK PACK AND TOWEL PACK.—Prepare mackintosh sheet and blanket, as in wet pack, and have half sheet or towels to wrap the body in, leaving out the arms, and pack in a similar way. The lower part of the person need not be undressed for this, unless preferred.

SITZ BATH HOT PAN.—This is a pan twelve inches by fourteen. The bottom three inches deep made water-tight, except a hole and plug to fill it with hot water. The sides raised above this three inches. A flannel pad, only one or two thicknesses, laid on dry, for the feet to rest upon when the person is using sitz bath, covering the feet over with a dry flannel, or altogether wrapping the feet in it. This will be better than putting the feet so often into mustard and water.

HOT-WATER SITZ.—This, for many cases, is most useful. The cases in which we do not recommend it are piles, heart affection, full habit, determination of blood to the head, or spinal affections. In cases of sudden attack of cold at the chest, or of the lungs, or asthma, stomach complaint, cramp, &c., it is highly useful. Have the water 100 degrees, or more if it can be borne, sit in the bath with the feet out and in hot water, or on a hot pad. Have a fomenting pad dipped in the hot water, spread over the throat, chest, and bowels, and one over the back of the bath to lean the back upon. Keep the arms down in the water by the sides of the body, and throw a blanket over the person, except the head. The hot pad will be found most grateful to the chest and bowels. Remain in ten or fifteen minutes, but not so long if perspiration is excessive; then have a tepid sponge over, and put on chest compress and body bandage, wetted as usual. The hot sitz will be found a very agreeable and beneficial bath, especially in winter, or in case of a chill or cold, and may be used at bedtime. (See 93, 98, or 99, Bath list.)

FLANNEL BODY BANDAGES AND CHEST COMPRESSES.—We now

adopt, for delicate cases, a flannel end instead of calico to body bandage, the flannel end double. Wring the flannel end out of cold or tepid water throroughly; unless it is well wrung, it will drip and be uncomfortable. This is a very important improvement; we have been able to get on with cases who could not even bear the calico bandage. Chest compresses, oiled silk, lined with flannel, and the flannel wetted, are very light and comfortable; still calico or spongio will sooner bring out crisis if there is inflammation.

VENTILATION OF BEDROOMS.—Too much importance cannot be attached to the ventilation of both day and night rooms, but more especially the latter. In our experience of disease, we see a very fruitful cause of the commencement of disease in confined bedrooms, and have often had our efforts in the day counteracted by the unhealthy influence of a badly-ventilated room in the night. If one or two persons were shut up for nine hours in the day in the room they occupy in the night, and under the same circumstances of closed windows and doors, and not moving out of the room, they would find it almost insupportable; nevertheless, asleep, they endure this every night, breathing the same vitiated air as if shut up in the day. No one can calculate the amount of disease and death from this cause; and it is the case in many first-class houses, as well as in cottages, although in the latter in a greater degree. In first-class houses there is seldom provision made for ventilating the upper part of the room near the ceiling; and as to the grates in the chimney, high up, called ventilators, they do not carry away half the quantity of bad air accumulated, besides often not acting at all: because, unless there is a difference—and that pretty considerable—betwixt the inner and the outer atmosphere, there will be no draught; for as water finds it level, so will air. Finely-perforated zinc, about four inches wide, at the top of each room, is good, and makes provision—by means according to circumstances—to carry off the air in the top of the room. The fireplace will not do it. As to cottages where the bedrooms are next the roof, take off several ridge tiles, and lay every alternate one over the other; or cover with a wooden tile, standing a few inches above the roof, and cover the opening over with perforated zinc inside, or any contrivance to get air. There is a totally unfounded prejudice against letting night air into bedrooms. Even delicate persons would be surprised what air they could bear, when in bed, not only without injury, but with very great benefit. Thousands have their health ruined, or die of disease, by breathing bad air in confined bed-rooms, without being aware of the cause.

MUSTARD for foot-baths, &c., may be had at any mustard mill, at 8s. or 9s. per cwt.; or free at Lea Mills, by working people. This mustard bran is stronger than best mustard.

METHYLATED SPIRITS OF WINE for baths, and sweating, may be bought at 4s. 6d. per gallon, of the chemist; 60 over proof does not give out any effluvia, and may be used also in Etnas, to heat tea or cocoa for invalids. Rectified naphtha will also act.

HOME-MADE YEAST.—One pound of malt, one ounce of hops, boiled in six quarts of water two hours; strain it, and, when nearly cold, add a half pint of the yeast from last making, mixed with a table-spoonful of flour and one ounce of salt. The yeast, put in a cool place, will keep good six weeks at least, in stone bottles closely corked and tied. Some public-house yeast may be used for the first; afterwards save some to make a fresh quantity with.

PUDDING very nourishing and light. Duryea's Maizena; to be had at the grocers'. Eight quarts of milk to one pound of maize. Put seven quarts of the milk over the fire; boil with two or three laurel leaves in, to flavour; mix the maize with the remaining quart of cold milk in a separate basin; add a little salt, one pound and a half of powdered lump sugar, half an ounce of butter, and eight eggs. When the milk boils, put in the other quart of mixture, and when thoroughly mixed, pour into moulds, and in half an hour it will be set, and ready for use.

BEEF-STEAKS OR CUTLETS.—The only way to have them tender: Put the meat in a tin pan, and put in water just to cover them. Put in a slow oven for four hours; then add flavouring, if desired, to the gravy.

DU BARRY'S REVALENTA.—One ounce to a pint of milk, or milk and water, flavoured with refined sugar or salt, is exceedingly nutritious, and will agree with the stomach when nothing else will. May be had of the grocer or druggist; the second quality best. 12lb. canister, 22s.

A VERY REFRESHING COOLING DRINK FOR CONSUMPTIVE OR FEVERISH CASES.—To one tea-spoonful of citric acid, two of cream of tartar, and the juice of half a lemon, and a quart of cold water, and sweeten according to the palate with lump sugar. If lemon cannot be procured, a little more citric acid, and the juice of an orange.

NEW MILK JELLY FOR CONSUMPTIVE OR DELICATE PERSONS.—Bake two calf's feet in two pints of water, and the same quantity of new milk, in a jar closely covered, for three hours and a half; a bit of lemon peel baked in it gives a nice flavour. Add a little sugar, if required, before it goes cold, and when cold remove any fat from the top. If there be no calf's feet to be procured, half a packet of gelatine, to be had at the druggists, will answer as well. *The patient should take it cold.*

STEWED APPLES AND PEARS are a very wholesome and valuable article of diet. The way we prepare them is as follows:—Pare the apples or pears; do not slice them, but put them whole into an earthen jar, with a little cold water, and sprinkle some crushed sugar over them; cover up, and let them stew gently for an hour or so, taking care the water does not boil, or become hot enough to reduce the fruit to a pulp. This requires watching.

FIGS are very wholesome, as follows:—Get the extra Elema figs; put a few in basin or jar; pour boiling water over them; stand three or four minutes; drain water off; sprinkle little crushed lump sugar over.

APRICOTS AND PEACHES, dried.—Take a handful, wash them in two waters to take away sand and straw; put them in a saucepan; just cover them with water; stew an hour. No sugar. The water will have become good syrup.

PLUMS, best picked French.—Stew in a jar until soft. Very excellent for invalids.

GINGER, preserved Chinese, put through sausage machine, softens and mellows it. Very good, instead of butter, for some invalids.

POMADE FOR THE HAIR.—One pound of fine olive oil, three ounces spermaceti in winter, three and a quarter ounces in summer—oil and spermaceti each melted separately in a tin vessel immersed in hot water. When melted, put together. Vessel then put on floor, and contents stirred till nearly cold. Add spirits of lavender when cooling.

ARROWROOT PUDDING.—6½ oz. arrowroot; 2½ oz. sugar; 3 pints new milk; 2 eggs. Set milk on the fire, mix the arrowroot in some of the cold milk, and when milk boils put in the arrowroot, and let it boil only 3 minutes; take off, and when cooled down a little under boiling heat, add the eggs and sugar, then put in pudding-dish, and bake in quick oven 5 minutes. MAIZENA MOULDS.—8 oz. corn-flour; 6 oz. sugar; 4 pints new milk; 5 eggs. Let milk boil, mix corn-flour in cold milk, then put it into the boiling milk, stirring it; then take off fire, cool it 3 minutes, then put in eggs and sugar; stir well, and boil the whole 20 minutes, then pour into moulds, and stand till cold.

APPENDIX.

DISEASE AND WEAKNESS OF THE TESTICLES AND SCROTUM.—I have had a great number of these cases, which have been successfully treated without the use of any but our own simple applications, as follows:—Where only weakness and relaxation of the testicles, if much pendent, a suspensory purse should be worn of knitted cotton yarn (or silk better), which can be bought at most druggists', or a bag made of oil-silk with a fine soft calico lining. (See Home Treatment, Index, for general use, and 106 Bath list, 114, 112, or 124, 128, all good to strengthen the spinal cord.) Trousers should not be tight. 16 or 16½, good; or 116, 116½, 107, good. Immediate beneficial effects are not to be expected, but perseverance in this treatment, and total abstinence from all medicine, stimulants, and tobacco, or very long walks, will prove restorative. I have had some severe chronic cases of water in the scrotum, which have been cured by general treatment for the health, as 50 with 141—148 with 143, 19 or 18, 233 or 235, 236½, total absence from all medicine, stimulants, or tobacco, and rest. Then as to treatment to disperse the excess of fluid in the scrotum, use 144 on rising and forenoon, and evening. Of course, a suspensory bag must be worn, and of a warm kind—spongio best, slightly damped, or oiled silk, with soft calico inside. Chillie paste rubbed in, or mustard poultices over the scrotum, will be useful to stimulate the absorbents; and if a red crisis comes on, all the better. 107 useful after the 114 if reaction can be got, 137 sometimes will be useful, but the fomentation is the principal thing to cause absorption of the fluid, with the 107 after, or tepid towel rubbing the part. As to tapping, it is certain ruin eventually. 114, 112, 121, 122—19, 18, all good to get up nervous power. Rest is essential on a sofa. I have had, several years since, two severe cases where the testicles had become greatly swollen and hard, distending the scrotum to a great size. One had been tapped for water in the scrotum, but it caused congestion of both testicles, and the puncture could not be got to heal. This gentleman, about fifty-five years of age, in a public position of life, a temperate, moral man, had been brought to this state from the usual course of the medical profession ignoring the vital functionary action. He came to me with a very offensive discharging abscess quite through the coat of the scrotum, in despair of life and in great suffering. I could at once assure him of a perfect cure; and now he has long been in the enjoyment of health and soundness. I began with 144, or foment pads over the part and on the bottom of the back, and 141 sometimes morning, forenoon, and evening, forty minutes at a time or one hour, wiping the part with napkins squeezed out of tepid water; dry the part, and rub over chillie paste or put mustard plaster on to stimulate the part. A suspensory bag of spongio-piline with a linseed-meal poultice inside, worn constantly to soften the part. Sometimes he sat over a night-commode with hot water in or conveyed steam into a box. 98 at night three times per week. The object of all this was to soften the testicles and scrotum; and then as to the general health, on which the cure really depends—First, abstinence from all medicine, stimulants, or tobacco, and rest on sofa or in bed. After the rising application, as previously stated, have 19 or 18, 12, and sometimes 99; in forenoon have 50 with 141, and other days 48 with 143, sometimes 115¾, 114, 112 good. After a time great swelling and great discharge of white matter from the hole in the bag came on, but the parts were softening and lessening in size; then crisis and oozing of a watery fluid all over the scrotum. This crisis went on until the parts resumed nearly the natural state, and as this was the case more tonic treatment was given, as 115, 107, but never cold sitz baths; 123, 124 good, and Home Treatment (see Index). Body bandages were worn all the time, see 233, 234, 236½. The process required a good deal of time, resolution, and self-denial, but now the gentleman is and has been enjoying life for years, actively engaged in business and public offices, instead of dying in agony, which his doctors held out no other expectation of. The other case was very

similar, and same age. A good, moral man, had seen a good deal of hardships in foreign climates; and when, from over-fatigue, the absorbents in the scrotum, like any other part, were relaxed, he knew of nothing but the doctors' anti-vital means, to make them worse, and they proposed castration, as a last resource. In Africa he met with my book, and resolved to come, by way of Toronto, where his family were, to our Institution, where he had the good sense to stay till a perfect cure was effected, and now, near sixty years of age, remains perfectly sound. Such recollections of life and suffering, and reason and amputation, saved, gilds the closing horizon of our lives, and memory calls up every now and then successful cases many, many years ago, which from the many thousands we have had we had forgotten. The last fortnight a gentleman has been snatched from the jaws of death by typhus fever. My bathman was sent for in his extremity, and in one hour turned the complaint, and brought him round, to the great joy and gratitude of his family; and within the same period a baronet has been similarly rescued from under the London M.D.s' hands.

(Case of fibrous tumour attached to testicle.)

Many years since, in the early part of our practice, I had a most singular case —one of the most peculiar kind of the great many peculiar cases, where all other means of cure have been tried in vain; but this case, like so many previously hopeless cases, got thoroughly sound by our revivifying treatment. A gentleman, age twenty-eight, several years before he came to me had had water in the scrotum, for which he was frequently tapped and injections tried. After the last operation the testicles began to swell and harden, until a large hard substance had formed in the scrotum. He had been under several eminent surgeons, but they gave up the case as hopeless, and told him it must eventually be fatal. In this condition he came to me. He begged I would try our treatment, and said he would gladly stay whether cure or death was the result. He had a wife and two children, and wished to make another trial for life. I hesitated to take the case, especially as our consulting surgeon said there was not the least hope of cure, and that a surgical operation would be almost certain to be fatal. This is what his former surgeons had said. I had such unbounded confidence in the natural resorative powers of our treatment, that I believed there was a good chance of his restoration; but how Nature would reduce the enormous unnatural growth I had not the least idea. I began by giving treatment for the general health—our stomach and liver packs. 50 with 141, 48 with 143—59—69 on 52; once a week, 46; morning 18, 19, 16, 16½—114, 112, —124, 125, and the usual body bandages 233, 234, &c. I paid no attention at all to the scrotum. I did not wish to rouse any action there until I had got up the general health, as if I had done so I should have got crisis there, without constitutional power to carry it on to a successful result. My patient patiently and strictly followed my instructions, and in a month we got him into excellent health, and five or six pounds heavier. I then attacked the scrotum, and by fomentations, poultices, 144 pack, &c. (as described in previous article, "Water in the Scrotum"), the bag grew to an enormous size, at least six inches in diameter, became very much inflamed, causing a good deal of pain, and of course confinement to the sofa, or bed. The good health we had previously got up now served him in good stead. One morning when I went to the Institution as usual, early, a bathman met me, and said my patient had burst, and was dying. I immediately went to him. He was sobbing, and said he was dying. The moment I saw his healthy countenance, I said, "Whatever you are going to do, I am sure you are not going to die." My bathman then uncovered the part, and I found the scrotum had burst open nearly the whole length of the purse, and showed a fibrous white tumour. Our surgeon was with me, and said if that was cured it would be such a case that had never been cured before. I said I saw my way perfectly in the case, and I assured my patient his cure was certain, and without the least risk. The surgeon shook his head and was incredulous. My reply was that if Nature had so far succeeded in making an opening, she would expel the

tumour, and that I saw through the mystery of this case, which was that one of th testicles was wounded the last time he was tapped, and having a good deal c old venereal matter in his system it had been drawn to the part. We went on wit nothing but fomentations, and poultices, and steaming. The quantities of white morbi offensive matter which was discharged from the part for three weeks was enormous but the patient's health kept up with our liver and stomach packs and body bandages so that he actually gained weight; and as the discharge went on the tumour reduce in size, until there was only a soft tangled mass attached to the testicle. I laid strict charge upon him to wait till it came away, but when the attachment had go to the thickness of a knitting-needle he cut it off. This was very hazardous; a fe drops of blood, however, only came. Our surgeon then said how will you close th scrotum? and wished to sew it up. I objected, and had it closed with crisis calico and a spongio bag. The parts united, and the patient got quite sound. I have th tumour now by me preserved in spirits. My patient called upon me eight year after a fine, healthy, prosperous merchant. He shook my hand heartily. I said did not recollect him. He said he had very good reason to recollect me, his nam was ——. Many a restored patient has come to see us many years after, when bu for their recognition we should have forgotten them.

Case of large, hard, tumified testicle cured in six weeks; after having trie every means of reduction by the surgeons, Nature reduced it in a wonderfu manner; the patient being kept in excellent health during the month he wa confined to his bed. The patient, age 34, had a stroke of paralysis 18 month before; general health bad; had taken a deal of mercury; water formed in th scrotum, which had been frequently drawn away by puncture, until the hardnes formed. First fortnight treatment was given for the general health; No. 2 o rising, Nos. 51, 48, 50, with 141, 59, 62, and sometimes 63, and the usual body bandages. The testicle was then attended to, and the following treatment which soon caused a large opening in the scrotum. First morning, No. 144 and 92, eighty-six degrees; second and third mornings, the same. Every forenoon foment the part one hour and a half, then Nos. 115 and 124; afternoon the same and No. 151, lint out of tepid water, and new lint every time changed. Sitting over steam often, and at same time sponging the matter carefully away by squeezing spongefuls of tepid water over; very important to keep the matter cleansed out often; used Condy's Fluid, eleven parts water; Nos. 233, 234; no flesh meat. Had no trouble with bowels all the time, and no medicine what ever; the previous treatment had put the body in excellent health. The case got perfectly sound.

(The following case, a factory hand, was getting worse under the doctors, when he wrote to me for advice.)

It is with gratitude and love that I am writing to such a gentleman as you, who has done so much for the benifit of mankind. You will phraps remember receiving from me a letter, respecting an enlargement in one of my testicles, which was caused by a blow. You directed me to apply to Mr. Cotterill, Matlock House, Manchester [formerly one of our bathmen]. Accordingly I wrote to him, and he said that the best plan would be to go to his house and let him examine me. I went, and after examination, he found that it was congestion of the testicles. He wanted me to stay a few days, so that I should get used to the baths. I stayed a week, which was as long as I could afford. He told me what sort of baths to have at home. And thanks to God, and you, his instrument, I am free from all pain, and the enlargement has gone down, and, by the help of God, I hope it will effect a cure.

CARBUNCLES AT THE TOP OF THE SPINE are always fatal under the surgeons. An officer in the army while in my Institution had a letter from a relative, saying

Lady ———, his cousin, had a carbuncle on the top of the spine, and had put herself under one of the first surgeons of the day. I told him her death was certain, and so it proved. I knew the surgeon would make a "free incision," under the idea of giving an opening for the escape of the matter; and it would, as certainly as he did it, be fatal. I have had some very serious cases of carbuncles formed at the top of the spine, but in every case not only has the patient survived, but the discharge has renewed the constitution and made a perfect cure. One, a gentleman from Sheffield, stout, age 54, accustomed to high living and a full allowance of wine, was brought to me by his nephew, a surgeon. The swelling at the top of the spine had only just commenced, but the pressure on the nerves had produced dizziness and loss of memory in a great degree. I took stock of my subject: I saw his unhealthy condition, and that Nature was attempting to relieve the congested brain and spinal column. The utmost care was, I saw, necessary to begin with, as a little extra pressure on the brain and he would have died in a fit. I began with the most delicate treatment—hot soaping, sponging all over the body, liver pack 48, and stomach pack 50 with 141; 137 sometimes, and linseed poultice to the top of the spine; 233, 234, linseed poultice all down spine; 220 in night under 168¾, 115¾, 115½, 121, 123, or 215½; good deal of rest in bed, no writing or newspapers, little company, no medicine or stimulants, and but little animal food. The carbuncle began to grow apace, but instead of being hard, became soft and moist. This went on until the carbuncle was an alarming size, and it required great care to keep him quiet. His nephew, the surgeon, came to see him, and said he thought before he brought him that his uncle would not stand the water treatment. I said, "Why, then, did you bring him to me, a non-professional man? But," I said, "I have not the least fear for the result." The tumour burst after long steaming one day, and instantly the patient's brain was relieved—all the powers of his memory came back. He was voracious for food, which I dared not give him, and, in the highest spirits—he said it was a new life. The part healed up and he got thoroughly strong, and two days after he left me to visit his nephew. He walked twenty miles in one day under a burning sun without the least inconvenience, nor did the complaint return. The cause of his recovery was the peculiar inventions we have for keeping the liver, stomach, and kidneys in an active, healthy state, notwithstanding the patient cannot take exercise or is confined to bed. Our 48, 50 with 141, 69—115¾, 59, 51, &c. &c., keep the body in vigour, and Nature then has power to repair any damage or weakness.. A case came with a tumour forming at the bottom of the spine, which the surgeons declared hopeless of cure by any means they knew of, and they told the patient that to try an operation would be almost certain to be fatal to life. We got the patient quite well.

Aneurism of the Heart.—A gentleman, age 40, came to me in despair; he said the surgeons he had consulted declared they could do nothing for his recovery. There was a swelling on the left side over the region of the heart, and it was a doubtful case of aneurism. The heart was often much disturbed, and of course the impression which he had from his surgeons was that any extra exertion might cause instant death. I had reason to believe that the swelling would prove muscular. I began with our gentle revivifying treatment, got up the general health, and then Nature showed us the cause of all this doubt and distress of mind. The enlargement went on, got softer and moister, was red and healthy, and matter formed. When we saw the tumour ripe for puncture, the part was first manipulated for several minutes to bring the matter to a point, and then the skin was punctured, not cut—no "free incisions." The patient quickly rallied, and went home hearty and sound, to the great joy of his wife and family, and to no less joy to us to feel what a power and blessing God had put in our hands. Such cases of various kinds, in despair of life, and which have returned sound, I could record by hundreds the last twenty-one years. Amidst many troubles such cases come back to memory as the triumphant deeds of our lives; and we are thankful the successful work is going on, and that our books are carrying the instructions to treat disease all over the globe.

MORTIFICATION means actual decomposition of the cellular tissues, and when this has taken place the dead matter is taken up into the circulation and conveyed to the brain, extinguishing life. We have saved many cases from this calamity where mortification has been imminent and the doctors stood by helpless to apply remedies to stop the decomposition; but by our poulticing, steaming, and then packing the part in poultice and sponcio, and the Derivative Treatment (see Index), the cases have been restored to health marvellously, but still in a way not at all surprising when the natural action of the body is taken into consideration. A case of injury, and consequent disease in the ankle and foot was cured; the poultices, steaming, and packings were aided by 141, 143, 144, 50 with 141, 48 with 143, 234, 233, 236½, and total abstinence from all medicine, stimulants, and tobacco.

MALIGNANT TYPHOID FEVER. (From *Ripley Gazette*, December 14, 1872). HYDROPATHY.—We have often heard of the value of the water treatment, and during the past few years a vast number of establishments have sprung up in the neighbourhood of Matlock all of them owing their origin to J. Smedley, Esq., whose establishment and successful treatment is known the wide world over. During the past week or two, in our own town, we have had a striking proof, on the one hand of the benevolence of Mr. Smedley, and on the other of the value of his treatment. A week or two ago, Mr. E. Fletcher, youngest son of Mr. J. Fletcher, builder, &c., Greenwich, came home from his situation in a draper's establishment at Sheffield, very ill. The doctor was called in, but the malady at once assumed a serious aspect, and in a few days the medical gentleman had to report that it was a case of malignant typhoid fever. This, of course, caused great alarm, and some member of the family suggested the trial of Mr. Smedley's treatment. That gentleman was communicated with, and as soon as possible he dispatched one of his oldest and most valued servants, Mr. George Gratton, of Lea Mills. Mr. G. at once saw the dangerous state of young Mr. Fletcher, but asserted his ability to bring him round, he set to work in right good earnest, and for more than a week, night and day, he scarcely left his patient. And now, without the aid of medicine, he has succeeded in rescuing a young man from an early grave, and in placing him in a fair way for complete recovery, and has left with the thanks and best wishes of the family both for himself and his worthy master. We hope the time is not far distant when it will be as easy to secure such treatment as it now is to secure professional gentlemen of the old school.

POLYPUS IN NOSE.—There are two kinds—one produced in the mucous membrane lining, which is most easily cured by being pulled out by a surgeon; the other is termed a fibrous growth, and deeper seated in the fibrous tissues and more difficult to eradicate. All the experience I have had in these cases is from seeing the case of our galvanist, Mr. Monk, age about 50. He had the polypus extracted by a surgeon, and the usual applications to prevent a re-growth, but the polypus came again and again, until a gentleman patient at our Institution told him that he had been effectually cured by first having the polypus pulled out, and then applying a bit of sponge cut in a spiral form, steeped in brandy, pushed into the nostril, and kept in ten minutes every night, or during day for several days, lying down on his back. This prevented a recurrence of the polypus. It is now several years since his cure. Caustic is generally used, and often produces incurable cancer. Astringents are used to cure after the polypus has been taken out; but I have not heard of cures by either of the latter processes.

LIVER CONGESTION.—I have a letter to-day asking advice for this, and saying the case cannot leave home. I advise Home Treatment (see *Index*), and 48, 50, with 141, 98 twice or thrice per week at bedtime; 234 during night; but instead of 174, put on 220 over stomach, sprinkled with a little pounded chillies. 236 in day, but before putting it on, rub over stomach and round body with chillie paste. No medicine, nor

stimulants, nor tobacco. No seasoned food, or pastry, and little flesh meat till well. 59 once a week good, or 51.

Case of Paralysis.—Peter Gregory, of Riber, a carpenter, aged about sixty, stout, was seized in bed, about 4 a.m. with insensibility and paralysis; lost power of limbs and speech. I had him removed to my Free Hospital at once, and put him in pack 47, Bath List, and in one hour he regained the use of his limbs and speech. He had then body bandage put on, a bread poultice over stomach, and flannel wrapper over, and 137, and put to bed again. He was so far recovered that he wanted to walk home on the mountain top that evening, but I kept him in the Hospital four days, gave 48, 50, 51, 59, 13, 10, and he got to his work on Monday following. Several years after I showed the man to Lord Ossington, then Speaker of the House of Commons, who paid me a visit, and expressed his admiration of our Institution and treatment. I have had many cases restored to the use of their limbs by our treatment the last twenty years, who would have dragged out a miserable existence but for our original inventions. Contrast the above case with any under doctors' hands, who never fully recover, and seldom get out of their hands without losing all chance of nature's powers of restoration.

(See Cut of ciliated membrane lining, pages 98, 495). The cilia always moves in one direction, and in the bronchial tubes this is towards the windpipe, upwards. Hence, all particles of dust—all sorts of materials in a finely-powdered state which may be accidentally sucked in during respiration—are prevented descending into and accumulating in the air cells by the influence of these cilia. A small atomic portion of road-dust is often drawn into the lungs on a blustering summer's day, but it effects no injury, for it hardly has got in before the cilia "take it in hand," and it is sent back again from one to the other till it reaches the mouth. Were it not for this grand provision, millers and stonemasons would be exterminated in a very short time; even as it is, they do meet their death sooner than other people, because of the inability of the cilia to prevent all the particles entering. A more energetic atom than usual will elude their vigilance, and slip down occasionally, and this being oft repeated, the collected matter sets inflammation and other morbid processes agoing, which ends in the extinction of life.

The Boat Race from a Medical Point of View.—The *Lancet* repeats a warning, which has been given before, as to the serious consequences which are likely to result to the rival crews from over-exertion in their struggle for victory on the Thames. It says: "Cases, doubtless, have occurred in which a regimen abruptly adopted, with particular reference to the impending claims on 'muscle' and 'wind,' has proved mischievous to the subject's health; indeed, the recent break-down of some two or three of the originally-selected oarsmen on either side may, in part at least, be ascribed to the shock thus given to previous habit. Neither can the repeated spurts put on during the varying fortunes of the race be always answered without injury, immediate or remote, to the contending crews, whose voluntary muscles must necessarily overdraw on the reserve force of the non-voluntary till the heart's action becomes irregular, and the beginnings of mitral, or even aortic, insufficiency are laid. But the ultimate effects of such strain on the constitution, insidious and rarely till after-life perceptible though they be, cannot but be more or less injurious. Professional watermen, as a rule, are not long-lived; the death of the English champion last autumn in Canadian waters being the natural *finis* to courses of over-training and over-exertion in a man young and strong indeed, but belonging to the neuro-sanguineous diathesis. Our University youth, however, who of course have no intention of making aquatic sports the business of their lives, are at a disadvantage unknown to professionals. Their transitions from a life of comparative ease to one of stern discipline, and again their relapses from the latter to the former condition, are

too far between and too strongly contrasted to conduce to continued soundness of constitution. A day or two suffice to make an oarsman of the Tyne or the Thames as 'hard' as may be necessary; and even the test of the final struggle leaves him little distressed. But weeks, or even months, are required before, by a constant process of sifting, an Oxford or a Cambridge crew can be brought up to the requisite standard of staying power; and scarcely have they retired from the contest into studious, or at least academic, life, when the newly-imposed habit is changed for the old one, and intellectual strain to make up for time lost to the schools is added to the sufficiently mischievous relapse from athletic to customary regimen. We have no wish to push these considerations too far; but they undoubtedly must be duly weighed if University sports in general, and the annual boat race in particular, are not to usurp a place in academic life prejudicial, not only to the *genus loci*, but to the physical as well as moral development of their votaries."

(*Doctors' helplessness, but for mischief in a simple case.*)

Complaints.—For the past two and a half months I have been suffering severely from *constipation of the bowels, piles, stricture* caused by constipation and pain of piles, contracting sphincter, muscle of bladder, and *flatulence*. This latter has become more troublesome lately; the wind appears to collect in the rectum, and its expulsion being prevented, I suppose, by the piles, causes me great pain, and deprives me of sleep and rest.

Cause.—The cause I believe was violent and, for me, *unusual* physical exertion, on the 30th of last May—climbing, running, and jumping up and down one of the Cumberland hills. I had breakfast very early—6 30 a.m.—a very slight one, too—with nothing whatever to eat until 3 o'clock in the afternoon, when I made a very hearty dinner. The next morning I had diarrhœa, which in the afternoon turned to constipation, and this, with piles, stricture, and flatulence, has continued ever since.

Remedies.—I have tried various remedies, simple at first; then allopathic, under a doctor here; and now I am using homœopathy combined with hydropathy, under the supervision and with the assistance of a friend, who has lately been staying at your establishment.

I have dallied so long, and got so little benefit (indeed, I think none at all!), that I cannot now afford either physically or pecuniarily to make any more *experiments*. Believing you to be a good Christian and a skilful gentlemen, willing to assist your suffering fellow-creatures, I appeal to you to say if you can confidently undertake my case, and in what space of time—the shortest possible—you can promise me a cure?

I am the accountant in a merchant's office here, and having a mother and sister depending upon me for support, and only a moderate salary yet, I cannot afford to be long away from home.

If you would kindly suggest a course of home treatment and regimen for the next fifteen or twenty days, under which I would be gradually improving, I should prefer to do this, and go at the end of that time to your establishment for the completion of my cure, to leaving my work in its present unsatisfactory state.

I am twenty-four years old, full-bodied, but scarcely *stout*, and rather inclined to physical inactivity. My occupation is, as you see, sedentary.

(*Advice given in above case.*)

I have carefully read your note, and I believe our remedies are the only course for your cure; but how long it would take to cure you it is impossible for me to say.

I advise you to use "Home Treatment" (see Index), 95 or 96; 85 twice per day three minutes; 99 thrice per week on rising, and 98 twice per week at

bedtime; 163 with thick dry flannel wrapper over in night, and 163 in day, if not too hot; if too hot, 174 dry in day. 73½ good; 152 good; no stimulants or medicine of any kind. (See Bath List for numbers.)

Case of Dr. Abernethy, showing the uselessness or the mischievousness of medicine.

Having in consequence of dissection imbibed some morbific animal matter, I suffered from fever, I became subject to severe rheumatic pains, which almost prevented my going about. In the second winter the symptoms rendered me almost a cripple for three months, nor were they mitigated by any medicine I took. During the whole of this illness I had no appetite, yet I ate food when it was put on the table. At the end of three months, I one day felt sick, but not to that degree as to induce vomiting. I now resolved not to eat till my appetite returned, and even then very sparingly, eating only vegetable food and drinking only water. In one week my appetite become keen, my digestion easy, my stomach tranquil, and I was free from rheumatism.

MEDICAL.

Death After Taking Hydrate of Chloral.—The *British Medical Journal* says:—"F. Jolly (*Bayer. Ærztl. Intell-Blatt*, 1872, Nos. 13 and 14) states that, in the course of two years, during which he has employed hydrate of chloral in the treatment of the insane, he had met with two cases of sudden death following its use. The dose was in each case below the average, and the chloral was chemically pure. The patients during life presented no contra-indications to the use of the remedy. One had taken the chloral at night for four evenings in succession; on the fifth evening, after taking it, the respiration and circulation at once ceased. The necropsy showed anæmia of the brain, acute œdema of the lungs, hyperæmia, of the abdominal organs, a perfectly healthy heart and vessels, and dark fluid blood. In the other case, chloral had been given twelve days in succession, with the effect of producing sleep after a short stage of excitement. On the thirteenth day the patient died, after some stertorous breathing, a quarter of an hour after the dose. There was here found moderate œdema of the lungs; the blood was fluid, but normally distributed; the heart was large and flabby, and its muscular structure was pale, but not friable.

The Action of Antimony.—Dr. S. Radziejewski, of Berlin, from a series of experiments on frogs and other animals, related in *Reichert and Dubois Reymond Archiv.*, comes to the following conclusions:—1. The emetic effect of the tartrate of antimony introduced into the stomach is the result of the action of the drug on the mucous membrane of the stomach, and not of its absorption into the blood. The effect of the peculiar irritation of the stomach produced by the substance is, by reflex action, to produce vomiting. 2. The depression of the action of the heart is also a result of reflex action, and not, as some have supposed, a special result of the action of potassium contained in the tartrate. 3. Antimony has, in addition to its effects on the intestinal canal, also a general action on the organism corresponding to that of arsenic.

Calabar Bean in Tetanus.—At a meeting of the Société de Biologie in Paris, M. Laborde referred to a case of tetanus in which he has given Calabar bean, and where extreme contraction of the pupils was produced. A *gramme* of the extract, the *British Medical Journal* reports, had been given. M. Leven called attention to the fact that toxic symptoms had been produced in several instances where Calabar bean had been given for the treatment of tetanus. There did not appear, he said, to be a single case of recovery from traumatic tetanus under the use of eserine—the active principle of the Calabar bean. Recovery from spontaneous tetanus, on the other hand, frequently took place under any treatment.

I. L.

"The Free Hospital, Aug. 29, 1872.

"The grateful emotion of my heart compels me to express the obligations I am under to you (under the blessing of God). I assure you except you had seen me when admitted into your institution, it would be impossible, looking at me now, for you to form an adequate idea how ill I was. I had been ill since January, and although I had full confidence in your treatment, I was so reduced that I came trembling, fearful lest my weak frame would not be able to bear up under your packs, douches, steam baths, &c. But oh, how soon I was undeceived! I found strong as the treatment may appear, in reality it is so mild that the most delicate and enfeebled need not fear. Therefore not being able to find language to express my gratitude, will you please to accept all I would give had I the language at command so to do, and more especially for the second week you so kindly offered me of your hospitality. I shall ever feel I am indebted to you. Dear sir, with your permission I should very much like to report your kindness, and the great benefit I have received, in our local papers; also I should esteem it a honour, and privilege too, to have a few minutes conference with you before I leave, as I intend to make myself useful among my neighbours. Please accept as an apology for trespassing upon your time the feelings of a grateful heart."

(*Striking Case of Restoration to Health.*)

A business friend of mine whom I had formerly known well in London, from overwork, mentally and bodily, became completely prostrated, although he had heard of the new work which I had got into, and had heard a favourable account of cures, yet he and his friends, with all the science of London M.D.s at hand, would not for a moment believe I could be of any service in such a case. They tried doctor after doctor, and as a last resource consulted Dr. Forbes Winslow, the great man for mental diseases. He pronounced my friend incurable, and that softening of the brain had commenced. He advised my friend to be sent to the seaside with an attendant, and be allowed to take what he wished, and do what he choose. He said he could not live long. This advice was given to my friend's relatives, he was not to know of it; but somehow he got to know the doctor's opinion, and he at once set his friends at defiance, and came to me at Matlock Bank. He came into my consulting-room when I began my morning's work. I told him at once he had no softening of the brain, nor was it possible, as the symptoms of such a terribe malady were entirely wanting. The result was that in three months he got perfectly well, and now, seven years ago, is, and has been all the time, free from any symptoms of brain affection, and is now on a visit to us at Riber Castle. Such incidents make up for many a weary, anxious day in our work.

Case just come in—will be restored to health—is already better.

I should feel much obliged if you will kindly consider the following case, and let me know, as soon as you can, if there is any chance of bringing about a recovery.

The patient is about fifty-eight years of age, a bachelor, of sedentary habits. He was a tutor in a public school until his present illness commenced in June of last year. At that time he suffered from a slight congestion of the lungs, which he neglected, returned to London, his home, for the holidays, and began to exhibit great nervousness, mental anxiety, and sometimes hysteria, complained of throbbings of his heart, and appeared to dread paralysis. This went on for some weeks, then a physician of London, Dr. ——, was applied to, who said he was merely below par, and recommended a change of air and scene—a journey to the Continent, &c. This he would not follow out, treating the suggestion as trifling with the malady. He went about occasionally to visit his friends for a day at a time, but almost always was dwelling upon his condition, expressing himself as utterly hopeless—

that the doctors could not do him any good, &c. &c. I should mention that from the first he got but little rest at night, sometimes no sleep at all, and, after tossing about until the morning, would arise suffering from increased depression.

Another doctor was applied to, a local medical man, who prescribed some medicines with a view to soothe the nerves; but, at the same time, stating, not to the patient, but to his friends, that a change of scene and employment would be the only chance for him. All this time his appointment at the school was kept open for him, but now he threw it up, and this also preyed upon his mind, of course, as he had but moderate means.

Dr. ——, of London, was now called in, and he prescribed tonics, with chloral to compose at night, and change of scene.

Nothing resulted from the medicine, the change of residence was not followed out.

When Dr. —— was applied to, he evidently considered the patient verging upon mental delusion, and would not communicate to him direct his views, but also recommended change, and the constant supervision of his case by a local practitioner.

At length change of scene was tried about six months ago. The patient went to Ramsgate, and walked out a little nearly every day, saying, however, that he felt very tired, and could not go far. But this was, I think, in a great measure, stated to create sympathy, for I observed, when I have been with him, that he could, when conversing on interesting topics, go over a great distance without any apparent fatigue. He would often, however, turn the conversation upon dismal subjects, upon self-destruction, the future of the dead, the justice, or the reverse, of the Deity, &c. &c., and to his near relations would say, that he felt often as if he must destroy himself. This went on for some four months, but with no marked result, though I cannot but think a slight improvement was at times apparent.

Then came the Ramsgate "season," and he fled home to get away from the bustle, and has been at home since, growing more depressed—sometimes of a morning, walking up and down the house wringing his hands and saying that all hope is passed for him. If any one suggests that he may yet recover he is angry, and pooh poohs it altogether. He seems to hug his malady, and yet there is underneath a half hope in something he has never tried. He says the doctors have poisoned him *with a purpose*. I am an old hydropathist, and I can easily suppose they have poisoned him, but assuredly not willingly.

I have urged upon him again and again to try hydropathy. He says, what can external applications do to a case of the kind?

I cannot reason with him; he beats me at argument; but I can only urge him to try, saying, hydropathy will do no harm if it does no good. He is now, he says, willing to try it if you say there is any chance of cure, or rather, to use his own words, for he will not hear of "cure," if it may bring relief or repose.

Even now with strangers, and in the after part of the day, he is apparently quite well. Plays a game of whist, or bezique, or backgammon, with zest, and manages to avoid the subject of his own condition. In the day-time, too, sometimes he amuses himself turning English poetry into Greek iambics, but generally he walks about the house restlessly, and as he is living with his maiden sister, who is very sympathising, he manages to draw upon her sympathy to her manifest injury as well as his own.

His mode of life has been, I should say, temperate; that is, he has taken his glass of beer and wine daily, he has long given over smoking, and has lived the quiet, and, I believe, moral, life of a well-educated Church of England clergyman.

He now says he can only "keep up" by taking beer in the day, or wine, or gin. He does not like much of it; but I observe for some time after taking a glass of ale he is cheerful.

I enclose a statement of his case by himself, from which you may perceive that upon the subject of his treatment he is not quite reasonable.

Will you say if you think there is any chance of your doing him good? and if I should accompany him down to Matlock?

He knows I am writing to you, and will want to see your answer. If there be anything you would not like him to see, kindly send it on another slip of paper.

Will you also give me some idea of your terms, and whether it would be better for him to be in your establishment or at a private house? He seems to have a dread of going among many strangers, and that was the last objection he made to trying the water cure. His impression was he was "condemned, and only wanted a bedroom where he could take his meals out of sight of all mankind."

At times he has, it seems to me, pure delusions. I see, on looking over his statement, he alludes to being unable to sit down. This really sometimes, about six months ago, was absurd; he would positively state he could not sit, "it was physically impossible," and yet he would be seated when he was asserting this. But latterly he has not exhibited these delusions.

I fear I have spun out my description to a wearisome length; but am anxious to give you every particular that may bear upon the case.

(*A terrible case restored to health at our Institution.*)

Till June, 1871, I was a schoolmaster in full work; I then neglected a congestion of the left lung, which lasted a week or two, and was succeeded by quick continuous beating of the heart, pulse 90. I consulted (July, 1871) Dr. P——; but what he gave me did me little good. I had scarcely any sleep by night, and he forbade narcotics. When he went out of town in August, I did as well as I could, and got worse, having no sleep. At last I called in two local doctors, named A——. They treated me as for a kidney complaint, and I got worse. My nervousness at last in October became intense. At last, owing I believe to strychnine or improper treatment, I became physically unable to sit down; the nerves keeping the muscles of the legs in constant motion. For a fortnight I was in this dreadful state. Dr. R—— saw me, but, I believe, never knew my real state, for the A——s gave me sedatives before I saw him. At last I quite lost my head in distress, and allowed myself to be treated by the A——s, as up to this time there had been only very great excitement, but no exhaustion, debility—effects of the drugs, perhaps—muriate of iron,—given me by the A——s in November. Teeth decayed in less than a fortnight Black particles and crass oil oozed through my pores. Quick beating of heart ceased, and I felt the nervous system worked on and subdued by the drugs. Hitherto I had been strong, could walk, &c.; now strength gradually failed—nervous languor, lassitude, &c.; a mile tires me out. At night, after three or four hours' sleep, I lie in a most distressing state between sleep and awake. Have become unfit for all duties of life. Felt pains in loins and legs after short exertion. My time divided between walking about in an agony of despair and dozing on the sofa. Quite well in animal frame. May live for years and years in this state. Can any relief be given? Any means of soothing the excessive irritability or strengthening the nerves? The specific state began expressly with the drugs of November last, which were in me for a long time. May not some of them be working in me now? I feel them sap and undermine my nervous energies. The A——s told me at the time that I should be restored to society almost as well as ever, that I should get on pretty well in a *poor* way. I am a ruined man—destroyed by quackery. I can see now on looking back how my case has been mismanaged. It was from the first a nervous ailment. The want of sleep was the terrible evil. If I had taken anodynes judiciously and gone about, it would have been different. But instead of this, I had strong drugs given me for two or three months, till my nerves gave way. Then came the dreadful mineral which destroyed them altogether. My state is now awful. I

spend a great part of the day lying on the sofa, too powerless to sit up or go about. My mind is all right, but I have lost the power of will and action. The least exertion exhausts the nervous energy, and I doze into an uneasy sleep. This life is hell on earth—enervation. Nothing in my past life to lead to this anticipation; I was always active, cheerful, &c., busy in school-work all day.

(*We have had thousands of touching appeals like the following, and have now the great pleasure of remembering how many such cases have been restored to health at our Free Hospital.*)

I duly received your kind letter of the 22nd ult., and have endeavoured to carry out your suggestions for home treatment, from which I have, I believe, derived a little benefit.

I have now obtained a fortnight's leave from next Saturday—this might be extended to three weeks, on a certificate from a medical man, but if I required to stay longer, I am afraid I should have to resign my position. This, as I told you I had a mother and sister partly dependent upon me, would be a serious matter, and I must, if possible, avoid it.

I find my monetary position now so bad, that I feel I have no alternative but to ask if you would kindly admit me into your *Free Hospital*. This will be especially necessary, if the duration of my cure will necessitate the resigning my situation.

Will you kindly say, by return of post, if you can do this? I shall be exceedingly grateful to you if you can.

The thought that the expenses of my illness were plunging me into difficulties, which, with my limited salary, would be very serious, would, I am sure, retard my recovery—free treatment would remove this difficulty.

Anxiously waiting the favour of your reply.

Having abstained from stimulants for eighteen years, I last year thought I would prove the effect of the good dry sherry, the claret, bitter beer, and the best ordinary Burton beer. I tried each in very moderate quantities, but the result was to convince me that all of them are injurious, and against healthy natural action of the digestive organs. When persons feel low or depressed they should bear with their feelings until rest and plain diet restores, and not rush into what assuredly brings greater trouble by taking stimulants or medicine.

(*Case would have been easily cured at my Hospital.*)

"I hope you will excuse me for troubling you with this letter, but as it is really necessity that drives me to it as a last resource, you will do me a favour I can never repay by answering it, and saying whether you can do anything for me or not. For seven years last June I have been laid up with rheumatics, so that for that time I have not done any work at all. My wife has been dead twelve years last April, and I am now living with my mother, who was seventy-eight years old last Sept. 13th, and who receives only 1s. 6d. per week from the parish, and that is all the means of sustenance she has for herself and me. Out of that, 1s. 4d. has to be paid for rent, which leaves her 2d. for the necessaries of life. Sometimes a kind neighbour will give her a few potatoes, and she has one loaf, one ounce of tea, and half a pound of sugar allowed her by the parish weekly. Somehow I think if I could only have a trial of your treatment, I feel sure it would set me up."

(*Knee Case; blisters, leeches, bungling M.D.s, and lameness.*)

A lady in our neighbourhood thinks she had pressed her knee against the iron safe in her room. She does not recollect any accident, but the knee began to

swell and feel painful. An M.D. surgeon was called in, who said if he had such a knee he should dispose of his practice and retire; that the synovial fluid had escaped, and he did not like to touch the case. After the patient had urged him to do the best he could, he said blistering was the only chance of cure. Blistering was persevered in, blister after blister, for a considerable time, but the lameness and pain getting worse, a consultation was called, and an M.D. of the highest repute in the county was summoned. He said the only course was to apply leeches to the knee, and so at it they went, resulting in the lady being in great pain, not being able to put her foot to the floor. These two medicos were sent adrift, and another M.D. applied to at the celebrated chalybeate baths, who said his two brother M.D.s had acted totally wrong, recommending the knee to be wrapped in cloths steeped in whisky and water, rest, and rubbing. The lady, however, after all these months' treatment, is laid up on the sofa, with a fair prospect of a lame limb for life. Such a case would have been cured in two or three weeks at the furthest by our treatment at her own home.

(*The legally qualified Conservators of Public Health utterly helpless, but to cause more suffering.*)

I have been troubled with the sciatica for two years in my hips and legs. I have several doctors' and other receipts, but have found no relief. I wish you to tell me what to do for the best, and the price of your leg and hip cases, and if I shall require more than one set? It commences in the hips, and then it is all right till it gets to my knees, and goes on to my ankles.

(*An old gentleman in great suffering, which the doctors could not relieve in the least; his daughter wrote my wife, who gave directions.*)

"DEAR MRS. SMEDLEY,—It is cheering to be able to tell you that papa is somewhat better. The attacks are less frequent, and not so severe. He has only had one the last week. All through his illness he has been troubled with a roaring sound in his left ear; still only able to sit up for half an hour a day. The numbness in limbs is now very nearly gone. Must we still continue letter Aleph? Will you kindly tell me if anything different to the regular treatment should be used during an attack? Papa desires me to give you his sincere thanks for yours and Mr. Smedley's kindness. I need hardly add how very grateful we all feel to you for having, under our Heavenly Father's blessing, helped us so successfully in our endeavours for papa's recovery."

(*We have had many such cases as the following come to our Free Hospital, and also to the Institution, and got thoroughly restored to the enjoyment of life. I have sent for this case to my Free Hospital.*)

"Please to premit a very unhappy Man to Write to you for your wise Councel I am in a very reched State of Miend with Shattered Nerves I am continuel contamplating Sueside I hope the Lord Jesues Will have Mercy on my poor Soule the Docters canot do me no good thay say thare is no Cure for Nerves complaints like Mine I want you to informe me what is the Best steps to take I have an Incom of 16 Shilings per Weeak I have Bene aling this four years I have Bene advised By My knabours in the Vilige ware i reside To Write to you thay say you are a Christen Jentleman hand of Large experence I dont wharnt to go to eney Lunetick Asylam if thinges can Be helped the Lord help Me hand give Me More strenth hand pacients under My heavy afflictions eney one Laying vilant hands canot go to heaven ho Mr. Smedley *save* me if you can I could Be very happy if My Nerves could be Quieted I am Sixty years of age I whant to wate the Lords Time hand die a Natturel deth if posible I am taking two things which is very bad that is Tobaco & Lodnam if you can do me eney good the Lord will bless you as I am so unappy I don't crave for nothing in this World But my nerves to be Quietened for my Time cannot Be so Long at the Longest why should I shorine My days a thousand years when past is But a day with the Lord."

(From *The Echo*, December 12, 1872.)

Among the discoveries of physiologists, none is more certain than that the food we eat in cold countries is largely transformed into the needful fuel to keep up the internal kitchen, only the superabundance being available for muscular and mental labour. In hot countries travellers observe that the coal porters are able to work all day carrying loads up the endless streets of stairs on a simple diet of bread and fruit, on which no man in England could perform any similar labour. The reason is plain. The porter's animal heat is almost sufficiently sustained by the climate, and his food, such as it is, nearly all goes directly to muscular strength. Here we want the food merely to keep up bodily warmth, and if we expend any of it in muscular, or in far more exhausting brain labour, the consequence is a sort of bodily bankruptcy. Now it is quite certain that it is in some of these states of exhaustion that we are most apt to catch cold, if, indeed, we ever catch cold, in the full vigour acquired by a recent healthy meal. It is before breakfast, while we are faint from the long interval since yesterday's dinner; or when we are defrauded of our mid-day meal for too long a time, that we usually receive a chill, just as it is at such times we are most liable to receive infectious diseases of all kinds. Thus it would seem as if the old and much despised proverb, "Stuff a cold and starve a fever," had in it at least so much sense that if we only "stuff" carefully before any special exposure to cold, we should never know that miserable "coryza" in our heads at all. Whether it be well to "stuff" after we have caught it, we must leave for the doctors and the patient to determine. Oysters and champagne for one, water-gruel and camphor for another, every mode of treatment seems equally orthodox, down to poor Mrs. Nickleby's prescription of the hot bran and water foot-bath which she applied at Christmas for the cold she had caught at Michaelmas, and which she gratefully remembered having nearly cured her before Easter!

We have observed of late years a strong tendency among people suffering from old-fashioned colds to try to find some other and finer names for those distressing, but wholly prosaic and uninteresting affections; and blessed is the physician who supplies them with such a word! Like the young lady who asked her little brother "Whether he were not proud of having a sister suffering from a chronic complaint, and who had signed a power of attorney," they are not a little consoled for their affection by being able to tell their friends that Dr. Bumbleby thinks there "is danger of diphtheria," or "there was nearly congestion on the lungs yesterday," or "my medical man says it is pleuro-pneumonia, or "the mucous membrane of the throat is greatly irritated." Nobody, in fact, that we know, whose maladies are of sufficient consequence to the universe to be given a name at all, has submitted for some time past to have a mere "cold." They would as soon think of confessing they had the distemper. Bronchitis is the very mildest term by which their suffering can be decently expressed; and, of course, the remedies for the evil must be equally serious and sonorous. No quiet stay at home, no hot posset, no tamarind tea, no barley-water and hot foot-bath for our generation. We must swallow half the poisons in the Pharmacopœia, allopathic or homœopathic—we must go about our business—and perhaps the end of all is, not that the cold leaves us, but that we leave the cold, and bequeath another to our unhappy relations who are doomed to stand bareheaded for half an hour in the bitter wintry air while we are being consigned to the tomb. One of Maria Theresa's daughters refused to be buried in the imperial vault, because the last princess who was buried there had died of small-pox. It would certainly be more to the purpose if our funeral ceremonies involved less risk of their survivors catching their death in cold weather, beside a grave where every condition of mental depression and physical discomfort are carefully combined to add peril to the performance of the melancholy duty.

ASTHMA. BY J. C. THOROWGOOD, M.D., LONDON.—The most recent work on this subject, by a physician to the London Hospitals for Diseases of the Chest, I supposed would convey some new and important information, and I accordingly immediately ordered it. But the perusal left me just as much in the dark as to any scientific certain cure or alleviation of the disease, and no more than I have read on the subject the last twenty years. The patient research, by talented educated surgeons and physicians, on the structure and functions of the human body, has left nothing of any importance to be discovered. Many so-called new discoveries mostly relate to curiosities of little or no importance to the cure of disease. Then, with this thorough insight into Nature's action, how does it come to pass that uneducated, non-professional persons, like ourselves, our bathmen and bathwomen (*some of whom have successful establishments*), cure cases of all kinds with ease and certainty, which in a multitude of instances have been given up as hopeless of cure or relief, as this work testifies? Besides, doctors of eminence and their relatives come and are cured of maladies in which their own practice is utterly useless or mischievous. My reply to this is, that it is the *unnatural* use of drugs, blisters, setons, and the various forms of torturing Nature, which poisons her and destroys her powers. Dr. Thorowgood begins his preface by quoting the various high authorities on the subject of asthma, and goes on to say at page v. of his preface that "*the connection of spasm with paralysis is far closer than some may think, and with this view he has insisted much on nerve tonics as curative agents.*" Now here the profession plunge at once into mischief and outrage on the structure and functions of the frame. "*Sedatives and antispasmodics at intervals, and on emergencies, not being incompatible with tonics as our really curative medicines.*" Here is a mixture of contradiction, and a mess too. The tonics are intended to strengthen the nerves, but it is soon, very soon found they do not agree with them; the sedatives are administered to come back again to the first state. What blindman's buff play with disease! Our fomentation, our rubbing the chest and back with tepid water, or mustard and water, or chillie paste, gives a certain tonic to the nerves, without a possibility of injury. Our 114, 113, 115$\frac{2}{3}$, 23, all appeal to the nervous centres, without a possibility of injury; 64 with 141 equalises the circulation, and takes the pressure off the weak part. But we never think of going back to undo what we have been attempting to do. Our 214, 137, our 48, our 50, our 179 or 180, our 235 all tend to raise vitality, comfort and relieve. I have had bad cases cured, but we do not profess to be able to cure all cases of asthma, if it is hereditary, or if of long standing; but we have made life comfortable to a great number, and enabled subjects of this painful disease to resume the duties of life, and with knowledge how to avert attacks. We prohibit all medicines, lozenges, stimulants or tobacco, or "generous living;" no suppers; early dinners, light food; no tea, but cocoa from the nibs, boiled twenty minutes—very nutritious, and not so astringent as tea is; coffee too heating; then as to clothing, bear as much on chest and back as can be worn without causing perspiration, and especially keep the legs and arms warm; wear woollen gloves on going out in cold weather, and not wash hands in cold water. As to general treatment, see Home Treatment in Index. Sea bathing highly dangerous, or any plunge baths, or quite cold baths. Dr. Thorowgood says the prolonged use of expectorants is to be strongly reprobated, but when he recommends their use, who is to know how far to go? But this is a trait of allopathic or homœopathic practice, and like playing with edge-tools or poison. We have a principle and an aim in our treatment, and but one aim and one principle, and that is to raise the vitality of the whole frame by simple external means, and get good action of the blood-making organs. Dr. Thorowgood's book is a small volume, but it contains an array of horrible anti-vital "*remedies*," frightful to contemplate being tried on God's wonderful structure, the human frame. He quotes Sir T. Watson, page 2: "The bodies of asthmatics have often, on being examined after

death, presented no vestige whatever of disease, either in the lungs or heart, evidences that the phenomena attending a fit of asthma may be the result of pure spasm." Now the cause being so clear, why does Dr. Thorowgood deluge the stomach with an array of nasty poisonous stuff, enough to kill a pig? He repeats, at page 160, "the combination of saline aperients with tonics to be a good practice," the one to counteract the effect of the other!! It is indeed, as Abernethy said, like a blind man walking through a china shop. He prescribes "iodide of potassium, muriate of ammonia," those terrible and insiduous poisons I have seen such terrible and even fatal effects from. "Diet on a generous scale," he advises: sherry and weak brandy and water, with cold salt water bathing (page 161). Poor Mr. Graves, M.P., got a generous diet, and the last generous dinner killed him. Preparations of arsenic, the doctors say, are useful in the dry form; in fact, the varieties of stuff to smoke and stuff to swallow, with "*diet on a generous scale,*" is only what a legal practitioner dare print.

(*Doctors' impotence to cure these functionary derangements; and so it will ever be so long as they use drugs instead of our comforting external appliances, which always, and quickly, give life. This case I advise to come will easily be set right, and taught how to preserve health. Every day brings me similar letters, and I am tempted to keep adding them to my list, but I must close.*)

"I have been advised by a friend, who has himself visited your establishment, to consult you with a hope that I may obtain relief from a malady which I will briefly describe. About three years ago I became sensible of a painful oppression at the pit of the stomach, which soon after extended to the chest. This pain came on when I attempted to walk any distance, or when anything occurred to produce mental agitation. After a few months it attacked me in the night, so that I had to sit up in bed till the paroxysm was over. These night attacks, which were very painful and alarming, ceased, through the Divine mercy, after three or four months. I consulted two eminent London doctors; one of them ascribed my malady to dyspepsy; the other to derangement of the nervous system, with which latter opinion my local medical attendant agreed, all of them assuring me that there is no serious disease of the heart. I used the remedies prescribed, and went twice to the sea-side for change of air and scene, and although I obtained some relief for a time—especially last autumn at Eastbourne, when the weather was fine and warm—yet, with the exception of freedom from night attacks, I am not much better. My present state is this:—If I keep quiet I do not suffer much; but if I am hurried, or if I attempt to walk more than a very short distance, the angina attacks me in the chest, and down both arms, attended sometimes with throbbing of the heart, so that I am compelled to stand still, then in a minute or two the pain subsides; but when I resume walking it returns as before. I may add that cold, and particularly with an east wind, aggravates the complaint, whence it has been suggested that the evil may partly arise from rheumatism. Thus, though otherwise not ill, and my appetite not bad, I am almost wholly unable to attend to my parochial work. Would you kindly inform me whether, judging from my description, you think this a case in which benefit might be derived from your system of treatment and diet; and if so, and you should be able to receive me, at what time it would be best for me to come to Matlock Bank?"

HOME TREATMENT.—I can only give general directions, and for such operations that can be readily practised where there is but little time to spare, or few conveniences. For persons in ordinary health, little time and very simple apparatus will suffice. A mackintosh sheet, a sitz-bath, or wash-tub, foment-can and pads, sponge, foot-bath, thick cotton packing-sheet and drying-sheets, and sitz-bath blanket, will be sufficient, or fewer. On rising use Bath list No. 95 or 96, according to power of reaction. Never use cold water when there is a cold or low power. In that case 9, 10, or 14 best: 13, 130, 10, or 11, or 98, once

per week. In case of cold or bilious attack, 98 at bed-time very good, with 14 after, but 46 is more effective—no cold water; 234, or 163, 169¼; to sleep in after 98 or 46. It is an error males not wearing night-caps. The circulation is not so strong at night. Headache and restlessness are often the result of the head being cold in the night, and sometimes deafness. An easy way to get a warm sponging on rising is to have a tin can with a cover, to hold ten or twelve quarts of boiling water, taken to the bedroom at seven or eight in the evening; wrap it in a piece of blanket, put it in an empty sitz or tub, and cover it close over with a mackintosh sheet, and it will be hot in the morning. 130 at bed-time very soothing, and also fomenting the eyes with hot water, after using them much in the day, or having been out in the cold. The 204 on rising strengthens the eyesight; 205½ will be found very beneficial in summer and autumn. No person, except very delicate, should omit having some water application on rising. Nature relaxes the frame during sleep, and gives out a good deal of insensible perspiration, and requires bracing on rising. The omission of this causes languor, and brings on congestion. It will not take above four minutes to perform the operations named in this article, either cold or tepid. The rubbing-sheet promotes good action of the skin; and if rubbed with flannel-sheet after all, the better. There are such differences of temperament, even in healthy persons, to stand cold, that only experience can guide. If a person feels a cold application not agreeable, use warm; but those who can bear cold will feel most invigorated. In winter or cold weather take care not to remain long partly dressed, or the animal heat will evaporate, and vitality be lost. Much benefit is lost by not dressing immediately, and not wearing slippers, which in winter exposes the feet to cold. I seldom take any bath in the middle of the day, from want of time; but when opportunity occurs, a lady's sitz cold or 70 deg. and foot-bath are refreshing and occasionally a cold or tepid sheet, or 96, 80 degrees. At bedtime a 70 deg. sitz three minutes, covered with sitz-bath blanket, soothing, or 115, but I rarely take any treatment at bedtime except 98, if a cold or bilious. No. 51, or steamer, may be managed with some hot water in a can, and put into some hot cinders or a hot brick, and let the person sit on a chair with blankets round, putting the can under the chair, or by a portable steam-bath, as given in this book. We have a mackintosh petticoat for this purpose, for home use, and it serves also for spirit-lamp. A spirit-lamp is very beneficial in most cases, and may be taken without risk. The spirit-lamp brings out the secretions, which the steam-bath will not. Wet packs I never take, except in cases of stomach derangement or cold, and then 46 for one hour and a quarter always effectually relieves me, and restores the appetite, or 69; with or without 14, after 12, or 12 if necessary after 14. No. 177, if chest affected, or 178. Nos. 154 or 157 useful and safe for most cases. The Bath list will give any person a good idea of suitable baths, and, by a little practice, the most beneficial will soon be ascertained. No baths, however, will keep persons in health without rigid attention to clothing, diet, and habits of life, as laid down in this work, and strict abstinence from stimulants, tobacco, and medicine. Delicate persons will find in this work how to modify these applications to suit their cases. If the chest is affected, never use quite cold water; use 14, 113, 72, 72½ good, Nos. 68 and 65 good, and No. 45; also 50; and never wash the hands in cold water if the heart or lungs are affected. Perhaps the most important points to attend to are the body bandages, chest and spinal compresses, as described in the Bath list. They can be used without trouble, never do any injury, and can be left off when not wanted without difficulty. 163 or 168¾, with 174 under it, over the stomach, both slightly sponged with cold or tepid water, and 172 or 169¼ over all, will be found very beneficial in night. 168¾, with 174 in day, or 163 good. 235 or 236 I often wear dry in day, and rub the stomach with chillie pomatum. 186, 177, or 186, 178, where chest is affected, good, worn night and day. 220 or 231 in night will be found very efficient to invigorate stomach, liver, and bowels.

(How thousands lose their limbs or their lives. Such a case as this would have been quickly cured by our fomentation, poultices, &c.)

"Will you pardon an entire stranger addressing you and seeking your advice and assistance under the following circumstances? Upwards of five years ago a boy of mine had the misfortune to get his right foot trod on, just on the instep, which grew so much inflamed that we sent for a doctor, who lanced it. It discharged a little, but the swelling did not go down. We did not think it serious, but got him a larger boot, and he went to school as usual; however, three years ago the swelling got worse, and we consulted another doctor, who said there was a diseased bone in the foot (*caused by the first cutting*), which could not be cured, and he said there was nothing for him but amputation. To that we could not consent, so we tried a hygienic doctor, who also said the bone was diseased, but he could cure it by cold water bandages, &c. We tried his plan for six months, but with no apparent results. After that his ankle began to swell, and is now in a very swollen state, and has, during the last two years, gathered and burst three times, but still with no lessening of the swelling."

(Lymphatic Disease.)

The friend of a successful manufacturer, past middle age, came to consult me to-day about his case. Another instance how little successful men of business and others know of the pitfalls of life. They rejoice in success or good fortune until nature's powers begin to flag, then they apply to the doctors to repair and revive the frame; but, alas! instead of benefit they only get accelerated mischief. In this case the country and London doctors pronounced the disease induration of the lymphatics, and consequent formation of lumps in various parts. The prescriptions all varied, but were all totally against natural vital action, given at random and without reason—iodine, calomel, morphia, aloes, acids, &c. They have given up the case. I have had many such cases the last twenty years, and cured them. I look upon the disorder as merely congestion of the lymphatic glands, obstructing the circulation of the lymph, just as congestion of the liver, &c., causing impeded circulation. I used our 47, 50 with 141, 59, 64 with 141, 137, 114, 112, 233, 234, with gentle manipulation with chillie paste, or neat's foot oil, to the lumps. Our object was to get up the general health and circulation, and in every case that I now recollect we succeeded in restoring to health. It is obvious drugs, allopathic or homœopathic, cannot restore the circulation or equalise it. Our grand point is to equalise the circulation of the whole body, and we see wonderful effects in taking off the pressure from weak or diseased parts, and allowing nature to rise.

(Knee Case.)

(Thousands lose their limbs or life, or are cripples for life, by the sad treatment of the medical profession. Such a case as the following would have been cured in two or three weeks at first, by simple home treatment; see Index, knee cases cured. George Wright, parish clerk of Matlock, had a serious injury to his knee, began with doctor, but soon after came to me, and he got quite sound. See Index, knee-cap injury, and Case, page 616.)

"I have had one of your books on Hydropathy sent me to peruse. Since reading it I feel a great wish to try your remedies. I have suffered nearly two years with a bad knee caused by rather over-reaching myself when kneeling to scrub a floor; a sharp pain came under the bend of the knee, which lasted only a few minutes, and then it commenced swelling till there was a very large lump underneath the knee-joint, which continued. I went next day to the doctor, who gave me a lotion and afterwards iodine to paint it. I used these, and more lotions for a considerable time, with little good resulting from them. It kept getting very hard; the doctor wished then to try a seton, which I did. It was in

ten days; when taken out, the place where it had been was cut across to cut out the bag of the tumour. I kept my bed a month; was very weak and ill; the doctor at that time wished me to be removed into the country for change of air. In a short time I was able to get there; the knee was very much contracted, I could not put my foot to the ground; he said I must persevere, which I did each day, and got my heel down in less than a week, and walked a little each day. The knee at each attempt to walk was much swollen; this I thought might arise from weakness. He thought, and even said he was sure, it was a perfect cure. But the swelling got to increase, the knee being very large this time all on the top. I went home; had an elastic knee-cap, which, for a time, seemed to support it, till one day I walked rather quickly down a step, the joint gave way, as it frequently would, dropped me down; I tried to save myself from falling by catching at the wall, and in so doing twisted the knee; the pain was very great, and the size after this much increased. I sent for the doctor; he said there was a great effusion in the joint, being three or four times the quantity there should be; it passed under the cap, lifting it off its place; the best remedy would be blisters to draw out the effusion. It was then kept open a month in that way, the size decreasing very much; the knee was again much contracted, and very weak. I was some time before I could walk; the swelling soon came up bad again, and I slipped continually, the joint gave way so easily. Next, had large plasters spread on wash-leather all over put on very tight, which soon drew the knee all over; small pustules then came all over. I wore a blister seven weeks, it was then taken off ten days, and one of the same repeated, which caused the irritation to become so great I had to take it off after about a week's wear; the sore then healed, and I got a new elastic cap, which is a great support, and the knee, the last month is better, but still I cannot walk more than a short distance without its becoming very painful and becoming very large. The doctor said last time it was fluid rheumatics: the blister plaster at last would benefit me most. I would not try them, as I think they have done more harm than good. Now I have stated the case to you, can you do it good? My age is 38; constitution not very strong, I think for want of proper exercise. Will you kindly write me a few lines to say what you think, and what your terms are, as my income is limited? I have nothing but what I earn at dressmaking, and wish to see a means of paying before I run into too much expense, as it has been a great expense to me already. A few lines at your earliest convenience will greatly oblige, yours respectfully."

(*Death from fatty degeneration of the heart. So said the doctors; but it was clearly only over-feeding which brought on the attack just at the time of night when digestion goes on. The stomach wanted relief, but the helpless doctor opposed it. Had Mr. Graves drunk a quantity of warm water and put his finger in his throat, the stomach would quickly and safely have been relieved of its contents; and then, if a wet body bandage had been put on, with a flannel wrapper, he would have been ready for his breakfast next morning. A man living in luxury, as Mr. Graves was, was sure to have a fat heart and a disordered state too; but there was no disease to cause death. See pp.* 9, 63, 199.)

"A profound sensation was excited in Liverpool on Saturday by the receipt of intelligence that Mr. S. R. Graves, member for Liverpool, had died very suddenly at the Euston Hotel, London, at four o'clock that morning. He had dined with the Duke of Sutherland on the previous evening, and, only on the previous Wednesday afternoon, had presided in all the fulness of health and vigour at the laying of the foundation-stone of new National Schools and Mission Room at Kirkdale.

"On Saturday evening Dr. Lankester, coroner for Central Middlesex, held an inquest at the Euston Hotel, on the body of Mr. Graves.

"Mr. James Beazley, a friend of the deceased, was the first witness examined, and was much affected. He said: I reside at Liverpool, but am no relation to deceased, who is fifty-five years of age. I was called up about twenty minutes past three this morning. Deceased knew I was here, and knew my room. The porter came, and said Mr. Graves had sent for me, as he felt ill. I went, and found him lying in bed. He said he had had a little sleep, but felt very ill. He added he thought he was not all right about the heart, and that he felt great oppression about the chest. I told him I thought it might be indigestion, and asked if he had eaten anything to disagree with him. He did not answer the question; but he repeated two or three times, 'Something wrong about my heart.' I administered a little brandy, and sent for Dr. Skelding, who came very quickly. The deceased died at five minutes to four. I went into the room at 3.20. The doctor saw him, and left immediately for remedies. Before the doctor returned the deceased seemed to me to endeavour to make himself sick, and thought that would make him better. I told him not to make himself sick, as if anything was the matter with the heart it might be injurious. Subsequently he became very sick, vomited a great deal, and then said, 'I feel a great deal better.' The words were scarcely out of his mouth when I heard a loud stertorous breathing, and he threw himself back on the pillow in a prostrate state. I put my hand on his heart, and found it not beating. He then gave one more loud gasp. I took the candle to look at his face, and feeling alarmed I left the room for aid, and met the doctor returning. Three minutes had not elapsed from the time he said he felt better till the doctor came and said he was dead.

"John Tidmarsh, night porter at the Euston Hotel, said: I let deceased in about a quarter before two o'clock this morning. He had arrived in a hansom cab. He seemed quite well, and was very chatty, and said he had been out dining with the Duke of Sutherland. He sat down and wrote a note to his friend, Mr. Beazley, who was staying in the hotel, and then went to bed. About twenty minutes to three my bell was rung, and finding it was from the deceased's room I went up, and found the door unfastened, and on opening it saw deceased standing inside undressed. He said, 'Porter, I am dying.' I got a light, and gave the deceased some brandy, and at his request went and knocked up his friend Mr. Beazley, who at once went to his assistance.

"This being the whole of the evidence, the jury returned a verdict in accordance with the medical testimony, viz., 'That the deceased had died from fatty degeneration of the heart.'"

(*Death from simple acute inflammation of the ear. Where is the great science of the doctors? This case would have been easily saved by steaming the ear, and applying our* 135, *Bath list; but the inflammatory action was allowed to go on and reach the brain, and so put an end to life. Doctors are utterly helpless in such cases, and know nothing but bleeding and blistering; and when the inflammation is acute, time is lost, and the patient dies.*)

"We regret to announce the death of Lord Lytton, which took place at his lordship's residence, Argyll Lodge, Torquay, where he had been residing for the last few weeks. Up to very recently Lord Lytton had (says the *Observer*) enjoyed unusually good health, and had been occupied in revising the proof sheets of 'Kenelm Chillingley,' the last of which were only sent to town the other day; indeed, letters were received in town yesterday morning from his lordship, written by himself. Lord Lytton had suffered for some time from occasional attacks of violent earache, and on Friday afternoon acute inflammation set in, which terminated fatally at two o'clock on Saturday. The Hon. Robert Lytton was in town, and was telegraphed for to Torquay on Friday evening. Lord Lytton was born in May, 1806, and was therefore in his 67th year."

(*Tobacco Poisoning. By the Sufferer.*)

"So much has been said and written for and against tobacco smoking, that I shall here confine myself to a few observations, the result of my own practical experience as a smoker of thirty years' standing. I began the unnecessary, and, in my case, *noxious* habit, at the age of twenty-nine, following, like others, the bad example of friends, and thus illustrating Darwin's well-known theory, that man after all is but an imitating animal. *Never* shall I forget *the first pipe*, and the unutterable feeling of nausea and wretchedness, felt after the performance of my most inglorious feat. Even *now* I cannot think, without a shudder, of the woe-begone sensation experienced at that time; indeed, the utter prostration resulting from it induced me to abstain for some time afterwards, until the repeated taunts of my friends made me return to the charge. I then tried the cigar; and though I at that time suffered from its effects, I gradually accustomed myself to the narcotic charmer, and became a smoker. I should here state that as long as I limited myself to a moderate use of the weed, and as long as I counteracted its noxious effects by strong bodily exercise, matters went on cheerfully enough; but whenever I increased the dose, whenever literary occupations induced me to abandon my usual daily exercise in the open air, I had to suffer from the following distressing symptoms:—Loss of appetite, vertigo, irregular digestion, obstinate constipation, disturbed sleep, impeded circulation, with numbness of hands and feet, frequent attacks of lumbago, derangement of the stomach, with clammy taste in the mouth on waking in the morning, pulsations along the spine after strong emotions, dimness of sight, giddiness (*éblouissements*), rush of blood to the head (in some instances followed by copious bleeding from the nose), palpitations of the heart, vertigo, followed by temporary unconsciousness. The latter happened once in the streets of London, after leaving my club, where I had been writing letters for several hours in the smoking-room, without, however, smoking at the time.

"I am surprised to find that medical men have hitherto overlooked the fact of the injurious effects caused by the inhaling of the atmosphere *vitiated by condensed tobacco smoke*, such as invariably pervades every smoking-room, even when well aired. Being now, from long experience, thoroughly convinced that the smoking of tobacco would, in my case, cause premature death, I have discontinued it, but I fear that I shall not succeed in destroying the effects which this noxious habit has already produced on my now impaired health."

The above statement is from the pen of a gentleman who was originally of very robust frame, and as he did not commence the bad habit of smoking till twenty-nine years of age, his physical powers had attained their full development, so that smoking did not in his case cause that weakening of the frame and stunting of the growth, which we so often see in young men of the present day, who began to smoke at ten or twelve years of age; but the injurious effects of the habit are sufficiently evident in the catalogue of disorders which he so well describes.

"I send you a case of 'Tobacco Poisoning,' which the subject of it has very graphically described, and you can make any use of it you like, only suppressing the *name* of the gentleman. He was employed for many years as a professor in the M—— College, but was obliged to discontinue his services in consequence of ill-health. I have a patient now under my care who is nearly *paralysed* from the same cause.—With kindest regards believe me, my dear Mr. Smedley, yours very sincerely, "J. M———, M.D."

(*Eye case. Ruinous scientific treatment; nothing to comfort and restore vitality; all war against life.*)

"Three years and a half since, at the age of thirty-eight, I began to feel weakness in the left eye, and dimness of sight from writing; a small ulcer

came on the white of the eye. It was treated by Dr. ——, an eminent oculist, who prescribed aconite, colchicum, &c., and afterwards burnt the eye with caustic a second time. Dr. ——, to whom I went afterwards, scarified the eye-lid, and had calomel injected, and confirmed the previous doctor's opinion that it was deep-seated inflammation. I afterwards went to another doctor, who placed setons in the temples, and blistered me behind the ears, and now I am obliged to lay aside. I have suffered greatly from pain in the eye and head, causing loss of sleep."

(*Treatment as follows.*)

On rising, first day, 128½, 9½, 73½; fourth day, 13, 10, 11; 205½ every day, morning and afternoon. Forenoon: first day, 48, 130, 130½, 131 (*pouring on eyes*); second day, 115½, with head-pour (*over eyes*) at same time; 220 to nape and also over stomach, day, and well covered. Afternoon: every day 92 and 155. Bedtime: 194, 214, 220 on nape of neck; after head-pour again for ten minutes. In two days he lost the pain and got sound sleep, which he had not done for two or three years, and will get well.

(*More sight destruction! When will doctors consider Nature's action, and, instead of warring against her when failing, help and comfort her?*)

"I may venture to ask you to consider a very painful case that has come before me the last fortnight. It is that of a girl of fourteen years of age, the daughter of very poor but pious parents. She was apprenticed to a dressmaker, and worked at her business up to this last Christmas, when she was taken ill with a cold, and with pains in the head and eyes. The sight, however, became dim, and gradually to decline. Her father became alarmed, and took her to a professional man. That gentleman said he could cure her, and began to operate on the eyes. The result, as he said, was the discovery of inflammation at the back of the eyes, which he could cure. He gave her pills, and applied leeches to the temples, which occasioned loss of blood. In his distress he came to me. I saw it was a bad case, and thought he was in bad hands. I had read the case of blindness in your book, and advised him not to suffer any further operation upon his girl, but to prefer the botanic treatment, with the body bandages. He has been to me this evening, and still finds the sight does not improve. He has read of your Free Hospitals, and asks me to write you for your kind advice, and to inquire if a place could be given to the child. Friends would, no doubt, furnish her with the means of reaching there. When I think of the child's age (only fourteen), I feel sure you will feel, with me, that if the sight is preserved, which I think can be by suitable treatment, it would be conferring a physical benefit that can scarcely be exceeded, and would be remembered by the poor girl with the gratitude of a lifetime, as well as the sincerest thanks of her friends."

(*We have great pleasure in recollecting hundreds of such cases as the following have been restored to perfect health at our Institutions, Matlock Bank and Lea Mills Free Hospital.*)

"20th January, 1873.—Mr. Smedley.—SIR,—I am induced to communicate to you in consequence of the indisposition of my brother-in-law, who is suffering from nervous debility. He is about forty years of age, and married. In the summer of last year he had an attack of sciatica, and as he recovered from that his spirits seemed to fail him, and he has since been in a very low, desponding way, afraid of seeing any one, imagining he cannot conduct his business, preferring to hide himself anywhere than to see any one; cannot get up before eleven or twelve o'clock; little appetite, but sleeps well. I may sum up his case thus:

he is a burden to himself and to all about him. Will you kindly say if you can, from my description, advise as to the best means to adopt with him?"

(*Rectum Disease.*) "New Zealand.

"I enclose P. O. O. for 10s., payable to you at Matlock Bath, and wish you to be so good as forward to me one copy of your 'Manual of Practical Hydropathy,' and one copy of Mrs. Smedley's work on the same subject. The balance will defray the expense for postage. I am induced to put myself in communication with you, hearing of the great success which has attended your system of treating disease. I am fifty-five years old, have led generally an active and sober life, and until lately enjoyed good health. About two years ago I was severely constipated, which continued for some time, and, unfortunately, was neglected. This led to my passing at stool considerable quantities of blood. About six months ago I began to be pained while at stool, and for some time after my calls to stool were almost hourly, while I could pass nothing but wind and dark blood. I applied to the doctors, but could get no relief. At last they resolved to examine me, which they did. They declared the disease to be tumours in the rectum, and not internal piles, as I supposed it to be. Be this as it may, the disease has reduced me considerably within the last five or six months, and made my life miserable, from the constant desire I have to go to stool, the pain from straining at the time, and for some considerable time afterwards, which I endure. My general health is good, and appetite fair. I would feel exceedingly obliged to you if you would drop me a few lines, giving me your opinion and advice as to treatment."

(*Advice.*)

I have had such cases get quite well. Examination does mischief. Use 105½, Bath list; sit over hot water in night-commode often; use 98 twice per week; 144 good; 139 sometimes; 152 with Condy's fluid, with eleven parts tepid water to one part fluid; use 99 once or twice per day. Then as to general health, use 48 once or twice per week; 50 ditto; 163 or 234, 115½ good; no stimulants nor tobacco, nor any kind of medicine; little animal food. The object must be first to soothe the part, and bring vitality there, and next to get up the general health. I should not fear curing you if here.

(*Rheumatic Gout.*)

"You will, I am sure, excuse my troubling you, but I was spending a day with some friends of mine, and met a lady who is a *perfect martyr* to rheumatic gout. She suffers *awfully*. She is only, I fancy, about forty, with, I think, a good constitution. They tell me they have tried Buxton, Ben Rhydding, and Malvern, and besides that, they have consulted and seen the best surgeons and medical men of the day, but with no success. When I dined at the house I observed that everything had to be put to her mouth, and she appeared to suffer much when moved. When I saw her I at once thought I would write to you, and tell you how the case stands. What do you think could be done for her?"

(*Reply.*)

We have had many scores of such cases, who have got quite well, after trying every other means in vain, or only to farther suffering. It may seem egotistical and dogmatical in my saying that our peculiar mild treatment, I am confident, is the only means of cure. Of course, we cannot ensure a cure in every case, but we can be certain of giving relief and benefiting the general health without risk of injury, with a great probability of perfect cure.

(*Accidents from Dentists' Gas.*)

"The melancholy accident at Exeter during the administration of the 'gas' (nitrous oxide) so commonly in use with dentists has come on the public as a surprise; yet this is the fourth accident of this nature now recorded, showing that it requires careful medical advice as to the administration of this 'gas.' There is reason to fear that the 'gas' has no marked superiority over ether or chloroform, except that as it is quick it saves the time of the dentist. The administration of ether is now fashionable. A sort of mirage, or Fata Morgana, of instrument-makers has conjured up or exaggerated the dangers of chloroform, and yet there have been nearly fifty deaths from ether administration, represented otherwise as free from danger. On the whole, chloroform, it is well for the public to understand, is as safe as any; or rather the means of making it safe are better understood: the patient here is, as it were, in a ship in a troubled harbour with pilot, but in using the gas or ether he is without a pilot.

"I am, &c.,

"Sackville Street, W., Jan. 25." "CHARLES KIDD, M.D.

(*Poor helpless doctors, with all their scientific acquirements, cannot procure natural sleep, nor even get natural action of the bowels. We never fail to do both. We have just had a case of a man of world-wide fame worn out for want of sleep; and a London M.D. and two M.D.'s from a city in the North, all their efforts only gave pain, and caused convulsions. In his extremity he sent a messenger to me. I went, and saw at once how easily he could be relieved. In two days he got natural sleep, and freedom from pain, and in ten days was out in his grounds. His M.D. declared he could not hold out above two or three days.*)

"Please say by return whether you think your treatment would benefit my case. I have not slept regularly for years, and for six months past sleep has totally left me. I take chloral every night to give me a few hours' rest, but I feel as though it is quite poisoning me, and am now quite debilitated—nervous debility. My digestive organs have all gone quite wrong. I am full of wind, and very ill. Doctors give me no relief, but friends say your treatment might set me up."

(*Helpless doctors! Such a case as this will easily get well by our means, and learn how to keep healthy.*)

"SIR,—I have been suffering very much for a considerable time past from rheumatism in legs, back, and feet, from which my doctor has utterly failed to relieve me. I am told your new system of Hydropathy is very efficacious in such cases. May I ask the favour of your sending me a pamphlet, or book, describing your manner of treatment? and please also state your terms for entering your Establishment as a patient."

(*Advice.*)

Attend to latter part of 227 Bath list treatment, and keep damp wash-leather under silk kerchief at night over eye, and wear a 220, sprinkled with a few chillies, to nape of neck; and the letter C, Home Treatment (Page 601), would greatly benefit general health.

(*Hundreds of such cases as the following have come to our Institution and got well.*)

"I have a married sister about fifty years old, and she has eight children. I think she is labouring under a nervous debility. Dr. Chadwick, of Leeds,

whom she has consulted, says it is the nerves of the heart that are affected. Her medical man, Dr. ——, of ——, says she must get away from home and her family. Medicine, he says, will do her no good. We wish to do the best we can for her. Have you a vacancy in your Establishment for such a case? She is quite sensible, but cannot sleep, and is constantly talking. Will you kindly drop a line by return of post, and say what your terms are, and if you can receive her soon? Your kind reply will oblige."

(*From Blackwood's Magazine.*)

"Edward Bulwer Lytton, Lord Lytton, died at Torquay on the 18th of January; and by his death his country has been deprived of her foremost man of letters. We ourselves have to mourn the loss of a much-loved friend and an invaluable contributor, with whom our relations have subsisted for more than thirty years; nor do we think that the correspondence between us was ever more active than it has been during the last six months. So completely did his letters, manuscripts, and *proofs*, indicate a man in the full ardour and strength of his intellect, that when we received, on what proved to be the day of his death, a melancholy note written by him two days previously from Torquay, describing the illness with which he had been seized, we grieved indeed for his pain, but never dreamed that his great and busy mind was almost at that moment laid at rest for ever. The following is the note referred to—the last, we suppose, that any one received from him:—

"'Torquay, January 16, 1873.

"'I am suffering terrible agony from a species of tic, and am utterly unable to look at any proofs or do any business to-day, or for some days; the pain I have been suffering is very trying.'

"In the evening of the day on which we received this note, we had a telegram from his son, Mr. Robert Lytton, telling us that his father had passed away that day about two o'clock. We learn from another source at Torquay that Lord Lytton's illness began on Wednesday, the 15th, when he wrote to our friend, putting off an engagement for the following day, and saying that he was then 'suffering more pain in the ear and head than he had ever endured in his life.' From this agony he obtained some relief; but about five o'clock on the Friday morning he complained again of severe suffering in the head, and from that time there was little hope; the end at last, which occurred on the following day, was peaceful and painless. Lord Lytton when he died was in his 67th year."

"*Peaceful and painless!*" Yes, truly, but when the pain becomes intolerable, and the doctors are at an utter loss what to do to relieve suffering, and being hopeless of cure, we know very well how the peaceful end is attained; a near relative, and several of my intimate friends, have been soothed out of existence. Now, in the case of Lord Lytton not a word is said as to any organic disease, and it is clear there was none. The impeded circulation in the ear caused the pain. Nature cried out for relief; she asked for bread, the doctors gave poison in the form of drugs, or injections. It is the only course they know. They have learned their practice at college in early life; a practice venerable and honourable by its antiquity, although utterly opposed to the functionary vital action of the human frame. Nature wanted the parts relaxing, and then stimulating to overcome the obstruction, which our 135 Bath list, and our steaming and poulticing, would have accomplished to a certainty. But we should have gone further than this, and given our 47 to equalise the circulation all through the frame, which would have immediately taken off the pressure on the brain. We should have used our derivative treatment (see page 27); 115½, 137, 115¾, 48,

50, 141, 214, 233, 234, 220 to stomach and kidneys. Cure, I repeat, would have been easy and certain by one of our bathmen at the patient's house.

(Heart Disease.)

Hundreds are quaking in their shoes from the deaths of eminent men declared to be from heart disease, fatty degeneration, valvular contraction, &c., when in fact it is simply from the Christmas dinners and the doctors' remedies. A merchant wrote to me last week stating his alarm, and said he had heard of our treatment, and wished to know if I approved of the treatment his doctor was administering to him—belladonna plaster over the region of the heart, with doses of aconite and claret. I wrote him that such treatment was simple destruction, and would soon destroy him, and that instead of weakening and deadening the heart's action by such means, he should put a mustard plaster over the region of the heart, and bear it on as long as he could, and then have a piece of damped spongio on, with a simple flannel wrapper to keep to the place, and when removed, rub our chillie paste on and over stomach. No suppers, no stimulants, no medicine; starvation diet for a week, and see Home Treatment and Diet in my book; 137 Bath list once or twice. The following is his reply to my advice, received this morning. Not a day passes but we have such cries for help, notwithstanding the great professors of the healing art are accessible; but their remedies are mischievous, because there is no truth in them:—

"SIR,—Pray accept my best thanks for your very kind and prompt reply, which duly came to hand on the 23rd inst. I have carried out your instructions, and, so far, with the best effect, for which I feel very grateful. I shall circulate your pamphlet amongst my friends, and if an opportunity presents, shall pay your establishment another visit."

DISINFECTANT.

(Fox on Ozone and Antozone.)

"Ever since Dr. Drew's return from Bâle, where in 1853 he had an interview with the distinguished Schönbein—to whose memory Dr. Cornelius Fox has gracefully dedicated his work as the great and illustrious father of ozonometry —atmospheric ozone has been an object of great interest to our profession. Dr. Drew, on the occasion of his visit to Schönbein, engaged to bring the subject of ozone observations before the meteorologists in this country. For this purpose a circular was addressed to all who were well known to be meteorological observers; and the readiness, Dr. Drew observes, with which the matter was taken up, especially by medical men, showed a deep interest in it. This was the year before the cholera epidemic of 1854, which occurred within the twelve months during which Dr. Drew's band of observers undertook to make simultaneous observations daily at times which coincided with those taken throughout Germany. The whole of the results were forwarded to Schönbein. This investigation, so highly interesting to medical men, not only induced many of our brethren to make special observations on ozone, but, in many instances, led them to extend their meteorological inquiries in connection with this peculiar form of oxygen; so that at the present day some of the most distinguished meteorologists are to be found amongst our ranks. The author of the present article prefers Böttger's method for generating ozone in the sick chamber, or for disinfecting air generally. Three parts of strong sulphuric acid are mixed very gradually with two parts of potassium permanganate. Böttger states that this mixture will continue to give off ozone for several months. Dr. Fox, after giving the history of ozone, and detailing the various theories with great lucidity, tells us that ozone is simply a condensed or allo-

tropic form of oxygen, and that they are mutually convertible the one into the other without the production of any other body."

(The following article proves how utterly at a loss doctors are to treat disease. The following is ludicrous, if it was on another subject than human life. See our treatment of whooping cough, page 136. *With our natural methods the complaint is soon and safely got over.)*

MACLEAN ON THE "OPEN-AIR" TREATMENT OF WHOOPING COUGH.—"Dr. Daniel Maclean (*Glasgow Medical Journal*, November, 1872) considers that the essence of whooping cough lies in the spasmodic state; and that, whatever the complications, where the tendency is towards death, most of the patients die by debility. 'We cannot control the cough; therefore let us leave the cough and its cause for future knowledge, and devise some way of enabling the body to resist the tendency to debility, which means the tendency to death.' Acting upon these opinions, the method of treatment which he advocates is 'to allow the children every facility for being in the open air, to go on with their usual games, taking care in the cold weather to have them well and warmly clad; to romp about, and enter into all the life and action usually characteristic of children.' He also advises 'cold baths night and morning, with friction to the skin, the temperature of the water according to the age, &c., and an occasional purgative.'"—SAMUEL GEE, M.D.—*Medical Record*, January, 1873.

DANCHELL'S WATER-TESTING APPARATUS.

This is a very handy case for the study table or carpet-bag. It contains the chief chemical tests for qualitative water-analysis, and will be found of use by medical and other men who may have occasion to ascertain in a ready manner whether any of the more usual impurities are present or not in water. It consists of a few test-tubes and dropping glass, and the following test-solutions packed up in a convenient form:—1. Test for ammonia (solution of zinc); 2. Test for decomposed organic matter (permanganate of potass); 3. Negative test for lead (solution of acetate of lead); 4. Positive test for lead (solution of bichromate of potash); 5. Test for carbonate of lime (oxalate of ammonia); 6. Test for sulphate of lime and sulphuric acid (nitrate of baryta); 7. Test for iron (solution of prussiate of potash). A larger size contains, in place of some of the former, and in addition, the following tests:—4. Test for lead (sulphuretted hydrogen); 8. Test for chlorine or chlorides (nitrate of silver); 9. Test for phosphates (ammonia); 10. Nitric acid (auxiliary test to 8). Directions for using and interpreting the tests are also provided, so that they may be applied by those not technically versed in chemistry. It will be seen that Mr. Dyke, of Merthyr Tydfil, one of the most experienced medical officers of health in this country, recommends that every medical officer of health should supply himself with one of those handy and compact little apparatuses.

(From the Medical Record, January 22, 1873. *Drs. Clarke and Amory on the Bromide of Potassium and Ammonium.)*

Notwithstanding the terrible suffering and destruction of human life the doctors witness from the administration of these poisonous preparations, yet they are extensively used as experiments. The doctors own they cannot calculate with any certainty on their effect on various diseases and various constitutions. Some resist the effects of the poison better than others, and in most they are utterly ruinous. I have witnessed a number of cases of softening of the brain, paralysis and impotency in the male generative organs, and paralysis of

the legs, from the administration of these bromides, the last twenty years, quite hopeless of cure. It has often been distressing to me to have such cases come as a last hope, and I have had to tell them I could do nothing but in some degree mitigate their sufferings. The rest of life must be lingered out in sorrow and suffering, and entirely owing to taking these poisonous preparations.

"Bromism not uncommonly occurs where these drugs are taken several times a day for some time. The phenomena occur much more readily in some persons than in others. They do not happen when only one dose, even large, is taken daily, and are not likely to arise if this be divided, provided the doses are taken near together, whereby there occurs a period each day when the system is almost free from bromine. Bromism usually occurs when a hundred grains in divided doses are taken daily (Echeverria on Epilepsy). The following are the phenomena enumerated by Dr. Clarke under bromism:—'Acne (skin disease), salivation, and salt taste; irritation of the fauces, generally with œdema and redness (Voisin, *Bulletin Général de Thérapeutique*), and sometimes with paleness (Gubler, *Bulletin Général de Thérapeutique*, 1864); moderate anæsthesia of the pharynx; laryngo-bronchial weakness, sometimes with cough, sometimes with a changed or whispering voice; fetid or bromised breath; occasional stammering; increase of renal secretion; diminution of mucous secretion generally; slight constipation, and, in a few rare instances, diarrhœa; sense of mental and physical languor or weakness; sometimes temporary impairment of memory; general aspect of hebetude and indifference; more or less somnolence; repression and occasional temporary abolition of sexual desire and power; impaired locomotion, which, when the dose is excessive, resembles the gait of locomotorataxy; diminished nervous sensibility in general, especially diminution of reflex sensibility. Sight and hearing are unaffected. The conjunctivæ, like the fauces, are often congested, but the optic nerve is unaltered (J. V. Laborde, *Archives de Physiologie*, May, 1868). The appetite and digestion are unimpaired; tactile sensibility, the sense of temperature and of tickling, appear to be imperfectly conducted, but really are unimpaired; intellect and emotion may seem sluggish, but when roused they act normally. It does not alter the chemical constitution of the secretions.' After an excessive dose, 'œdema supervenes on congestion of the uvula and fauces; the whispering voice sinks into aphonia; sexual weakness degenerates into impotency; muscular weakness becomes complete paralysis; reflex, general, and special sensations disappear;' hearing, sight, and taste are lost; the mind becomes imbecile, and there occur 'hallucinations of sight and sound, with or without mania;' the pupils are dilated and uncontractile. Dr. Clarke estimates that two-thirds of his patients who took the bromide several times a day suffered from acne. The bromides are useful in angina pectoris. Two grains should be given three times a day, and a thirty-grain dose at the onset of a paroxysm, being repeated in half an hour or an hour if necessary. Like angina pectoris, whooping cough and asthma are only occasionally benefited by these medicines, and the symptoms indicating their use are at present unknown. In neuralgia, Dr. Clarke agrees with Anstie (*Neuralgia and the Diseases that resemble it*), that in most cases bromides are quite useless. 'The patient must not have entered on the period of tissue-degeneration. . . . Those who will benefit by the bromide are subjects—especially women—in whom a certain restless hyperactivity of mind, and perhaps of body, seems to be the expression of nature's unconscious resentment of the neglect of sexual functions.' The medicine must be given in large doses, and it may be increased until ninety grains are taken daily. Headache accompanying grief or worry, and also sick headache, where the pains, &c., precede and predominate over the gastric symptoms, often yield to bromides. The medicine must be given as soon as the attack begins, in twenty-grain doses, repeated hourly till the system is completely under its influence. It is also useful as a prophylactic, given daily in moderate doses."

(*Medical Record, January* 22, 1873.)

THE FATE OF EMPIRES.—"M. Piorry has written to the Académie de Médecine to express regret that, prior to the Franco-German war, the size and shape of the kidneys in the late Emperor Napoleon III. were not investigated by 'plessimetric percussion.' A little more plessimetry, and France might have been saved. On such threads does the fate of empires hang."

THE GEOGRAPHY OF CALCULUS.—"Dr. Macnamara stated at the meeting of the Dublin Surgical Society, January 3rd, that vesical calculus was very rare in Ireland in proportion to the population. Some of the most eminent Irish surgeons in the largest practice had not had more than fifty cases of lithotomy. Sir Philip Crampton had only had fifty-two, while when on a visit to Scotland he had witnessed the 266th and 267th case of Mr. Keith, of Aberdeen." [The general law seems to be that calculus is relatively rare on western coasts, and common on eastern coasts; thus it is very common in Suffolk, Norfolk, Lincolnshire, Yorkshire, and along the coast to Aberdeenshire, and rare on the opposite coast. All the great lithotomists of the country have belonged to the eastern coasts.]

FOOD.

"But, although it is absolutely necessary that we should eat, and that several times daily, it has by no means been determined *what* we should eat. Experiments have been tried in workhouses and prisons without at present much practical result. We have dietaries and tables expressing food-values which place milk at the bottom of the scale and herring at the top! Liebig's food theories have been considerably shaken, and we have Letheby's Cantor Lectures 'On Food and its Varieties' succeeding Liebig. He deals with its 'chemical composition, nutritive value, comparative digestibility, physiological functions and uses, preparation, culinary treatment, preservation, adulteration,' &c.; in fact, he is as exhaustive as he can possibly be in four lectures. Dr. Letheby starts first with wheat, and then comes the disputed question as to whether it is best eaten with the bran or without, and this can only be decided by the requirements and capabilities of each individual. The bran is considered to be rich in soluble phosphates, which are especially valuable in the dietary of growing children, and the bones and brain require them. But although useful to some on that particular account, it is injurious to others from the too great irritation of the alimentary canal it occasions. The hard-working navvy, the doctor tells us, chooses white bread because he finds it not only more digestible, but stronger, enabling him to do more work. As to vegetarianism, or living altogether on vegetable food, perhaps if man had four stomachs, like the ox, and the same love of, and time for, rumination, he might be able to extract enough 'force' from a vegetable diet only; but as he is at present constituted, there is but little work to be got out of him upon it. He wants a more nitrogenous diet, which is only found in flesh-food. In fact, if you want to take all the pluck out of a man, you have only to keep him on vegetables. The experiment has been frequently tried, both on individuals and communities. Meats are not to be judged altogether by their nutritious qualities; their digestibility must also be taken into account. It is of little use that food should contain a large amount of force, if the greater part of that force is consumed in digestion. Fish is considered to be of little value as food; but this may be prejudice, for not only does it contain some 18 per cent. of nitrogen, but Professor Agassiz affirms that it supplies the best kind of food for the brain. Butter is required to supply carbon, and 'all fish,' we are told, 'are in their best condition at the time of the ripening of the milt and roe; for not only are they fatter at that time, but when cooked they have a better flavour, and the flesh is solid and opaque. On the other hand, when they are out of condition, the flesh is semi-gelatinous and watery.'"—*From Manual of Anthropology, by C. Bray.*

VENEREAL DISEASE, SYPHILIS, FIRST AND SECONDARY SYMPTOMS.—I have lately been reminded of the omission of treatment for these cases, of which we have had hundreds successfully treated, some females under my wife. They are not cases we are very desirous to have; still I believe, from many years' experience, our natural restorative treatment is the only way to thoroughly eradicate such diseases; and of this we have had so many proofs that we have confidence in making perfect cures when every other means have failed, and we believe must necessarily fail, because no treatment but that alone which purifies the blood, and gives vitality to the system to throw off disease, can cure. No physic can do this, but only allays symptoms and retains the poison in the frame. I had last year a severe case of lost sight of one eye from syphilitic inflammation, the sight of the other going, and the frame in a wretched state, although under the care of an experienced medical practitioner. I could assure the patient of a thorough restoration to health, and the sound sight of both eyes, and that it was only a question of time. He got thoroughly hearty, with perfect sight of both eyes. Two cases, where one testicle actually protruded through an abscess opening into the scrotum, got quite sound. Another, the back of the throat sloughing, got quite sound. We never use any medicine whatever for these cases, no injections, no lotions. The treatment simply consists in warm or tepid sitz baths, see 105½ Bath list, 90, 115½; bandages as 168¾, 220, 169¼ night, or night and day at first, or 168¾, 174 less cumbrous, in day time. 98 sometimes useful, and sitting over steam. This can be done by putting boiling water in a night commode. The most important is the general treatment to get up vigour in the stomach, liver and kidneys. No stimulants, little animal food. 50, 141, 48, 64, 70¾, 52, 19, 14, and as strength improves, 14, 15, or 19, 18; but cold sitz will not do until long after perfect recovery, or congestion will take place from the organs being weak. 115½ good, 114, 113, 124. Such cases we do not allow to have baths, except in a private room, and on no account to use baths or bath apparatus used by other patients. Venereal disease is far more infectious than is imagined. Great care is necessary with bathmen and women that they do not become inoculated, which has been the case from carelessness.

(Doctor's murderous treatment. The following letter I have received this morning, and indeed few mornings' posts come but bring me such cases.)

"Some eight weeks ago my second son, William P. Taylor, was suddenly seized with pains in the back of his legs, which extended to the back part of the thighs, the small of his back, and to the back of his neck. For some three days he was able to walk about with assistance, when we called a doctor in, and under his instructions he was put to bed. As the paralysis and pain did not leave him, the doctor ordered a fly blister to be put on the back of his neck; and the pain still continuing, another on his back. The general symptoms are:—he has quite lost the use of his legs when in an upright position, but when lying in bed he can draw them up to him. He is also very weak in his back, and at one time could not even move himself in bed. Twice he has lost the use of his arms, but has both times recovered in a day or two. Then about three weeks ago he had a fit, in which his whole body (excepting the arms) was quite rigid, and remained in that state for three-quarters of an hour. The doctor was again called in, and applied a blister to the back of his neck. Since then he has remained in pretty much the same state, without any indication of improvement. I have not the means, or I should have sent him to your establishment; as I cannot do this, perhaps you will kindly give me the benefit of your advice as to his treatment; also, do you think, from the description of the case, that there is likelihood of his permanent recovery? "THOS. TAYLOR."

(Reply to the foregoing.)

The treatment your son has had from the doctor is shocking, but I receive scores of such letters. A single foment pack (see 47 in Bath list) at first would have put him right in an hour or two, but instead of bringing warmth to raise the vitality, doctors do just the contrary, and hence such results. It is doubtful now what can be done for your son, but if you send him to Jas. Hawley's cheap Institution, Matlock Bank, I will advise free.

I send you a bottle of my chillie paste to rub spine and legs. Use 114 Bath list, also 115½, 112, 214, 141, 7, 12. No physic, no stimulants. Write when you wish.

(Eyesight ruined for life by the highest authority in the profession. The lady, now grown up, is come to our Institution for improvement of her health. It is sad to see these doctors' victims, made so by the most outrageous, senseless treatment. One case I name (see page 164) where a blister was put on the forehead of a healthy man, where no disease, only weakness, caused blindness for life soon as the blister rose.)

"Miss de W—— suffered from what is called infant ophthalmia; the doctor syringed it with caustic, and entirely destroyed one eye before she was three months old; the other she can see a little with. The doctors say that nothing more can be done for her."

Another case, the child of a labouring man, and same age, similarly affected. The mother had not means to employ scientific skill; she bathed the eye with old milk, and then with cold green tea, and the child was quickly well, and its eyesight saved.

Toe Crushed.—A man had a wheel passed over the toe, badly crushing it. The object should be to restore circulation by heat, and keep the heat up constantly. First foment toe, foot, and leg with hot flannels as 143 Bath list, or put foot and leg in hot water; after getting up the circulation well, put on bread poultice, as 220 Bath list, and pack leg as 214. Repeat these processes, keep leg and foot well packed up night and day, and keep it on a cushion, not put foot down, as the circulation will go on easier up than down (see 146½ Bath list). 141 to legs sometimes good to stimulate circulation, that and 143 will draw away inflammation from injured part. When the pain and inflammation is subdued, then put on piece of wash-leather squeezed out of warm water, and oil silk over, or bit of damped spongio-piline, and pour on as 17½ Bath list.

(Testimonial.)

"Having been at your establishment in May, 1870, being so exhausted of health, that all the M.D.'s had given me up; but, thanks to God for his blessings, under your kind and skilful treatment, I am now (Feb., '73) in very good health. I have since that time adhered to the rules that you have laid down in your most valuable book. Before I came to your establishment I could not be two nights without taking pills and drugs continually, for nearly four years, besides being hampered by the M.D.'s with blisters, setons, &c. But I have never been at an M.D.'s since, nor have taken any drugs. I was suffering from general debility, heart disease, they said, and a very bad liver. I was very nervous, but now I am in full spirits, and do firmly believe that I should have now been numbered with the dead but for coming under your kind treatment when I did. I have only to thank God and yourself that I am in such good health.

"Hall Farm, ——shire."

(Testimonial.)

"I am writing with my heart full of gratitude for a vast benefit I have received from one of your valuable works. I ought first to tell you that for many years I have suffered from dyspepsia, have passed through a sea of grief; but for the last seven years have suffered with spasms nearly every night, about seven in the evening, and lasting until morning, morphia only relieving me of the pain. I was advised by a friend to try wrapping a warm wet sheet round the bowels, which I did for three weeks, and very shortly found myself entirely relieved."—*(See our body bandages, Bath list, 235, 236.)*

Knee Case.—A farmer, rather stout, aged 60, stumbled into a hole, sprained his knee, which was soon swollen and painful. I happened to see him several days after, I advised fomentation with flannels and hot water for an hour or two, then rub with chillie paste, put on damp spongio knee-cap, and a good wrap of flannel over, and keep on sofa or bed. This was once repeated, then only chillie rubbing and spongio knee-cap, and in ten days he was sound.

"I have a bad knee; it took me when I was working a shovel, scraping up a yard. It took me under the knee first; I could not bend or straighten it. I have been to many doctors, but they don't do it much good, and now I am in St. George's Hospital. I have been here nearly nine weeks, and am going out on Wednesday. They cupped it first, and since that they have been applying iodine, but it has not made any improvement, it still keeps swollen and hot, and throbs. The bone is also enlarged. The doctor says it is chronic inflammation. If you think that you can do it any good you will oblige me."

With all the scientific acquirements of all the learned doctors in the world, they have never yet invented means to make the bowels and liver and kidneys act without using ruinous purgatives and diuretics. Our plans accomplish natural action from external applications alone.

The following selections of Bath Numbers may be useful as a general Guide to Treatment.

NERVOUSNESS.—The following treatment is intended for cases where there is no positive disease of the nutritive organs, but for the class of dyspeptics with overwrought energies of mind or body. Severe cold water is the rule for such cases at most Hydropathic Establishments; but it is never used without danger to the life of the patient, and never cures. Milder treatment is often resorted to when permanent mischief has been done by the other treatment. The following baths are calculated to avoid relaxing the frame, but at the same time gently stimulate; such cases generally have better appetite than powers of digestion, and often suffer from taking too much food. Warm clothing is indispensable to keep up the vitality of the surface of the body, and thereby relieve internal congestion. Gentle exercise in the open air is necessary. Avoid aperients, however constipated, but occasionally use enema of warm water; but not if action of bowels every few days. 6, 7, 13, 13¼, 13½, 19, 21, 22, 24, 25, 30, 35, 35½, 36½, 39, 43, 45, 51, 55, 63, 64, 70, 70½, 73, 73½, 76, 77, 78½, 87, 91, 92, 93, 94, 95½, 96, 98, 99, 99½, 103, 105, 106, 107, 108, 110½, 112, 114, 115, 115½, 115¾, 116¼, 120, 122, 124, 126, 127, 128, 128¼, 130, 131, 132, 133, 143, 153, 154, 157, 158, 161, 162, 163¼, 165, 186, 193, 195, 199, 200, 204, 205, 205¼, 206, 207, 210, 210½, 212, 213, 215, 218, 222.

RHEUMATISM, ACUTE, is brought on by long-continued indigestion. The red tongue will have shown signs of inflammation of the mucous membrane lining of the digestive organs before the rheumatic pains are felt. In this stage there is inflammatory action, and the treatment must be with a view to stop it, and draw the inflammation out to the surface of the body; this almost always develops itself in crisis (read from 195 to 199), and soon as the rash comes out, relief is soon felt, followed by cure. For this purpose treatment producing greater reaction than in chronic rheumatism is best, such as hot baths, followed by tepid, and abstinence from flesh meat, all stimulants, tobacco, coffee, &c. Purgatives or blistering do certain mischief. 9, 17, 22, 22¼, 25, 26½, 33, 35½, 40, 41, 42½, 43, 44, 46, 48, 52, 55, 58, 59, 60, 61½, 66, 73¾, 75, 78½, 88, 93, 98, 118, 121, 133, 137, 141, 144, 150, 150½, 153, 153½, 153¾, 160, 161, 161½, 162, 163, 165, 168, 170, 186, 193, 194, 195½, 199, 206, 207, 208, 210, 214, 220, 222, 223.

CHRONIC RHEUMATISM. — When the first stage of rheumatism (acute) has been allowed to go without remedies, the vital powers of the body become prostrated in a degree which, without inflammatory action, settles down into permanent stiffness, contraction, and pain on moving. The treatment is with a view to raise this prostrated state by gentle soothing treatment, and not by strong cold and hot baths, which are so beneficial in the first stage of the complaint. 6, 8, 8½, 9½, 11, 13, 17, 20, 24, 25, 25½, 35, 35½, 36½, 37½, 46, 47, 51, 52, 53, 55, 57, 57½, 59, 61½, 69, 75, 78, 92, 99, 108, 110½, 112, 114, 118, 123, 124, 127, 128, 130, 137, 140, 141, 142, 143, 149, 150, 153½, 156, 159, 160, 161, 161½, 162, 163¼, 166, 168, 169, 170, 172, 186, 193, 195, 195½, 198½, 199, 200, 206, 207, 208, 210, 214, 222.

BRONCHIAL AFFECTIONS and diseases of the lungs are very generally owing to the changeableness of the English climate, accelerated by carelessness in dress and ventilation, and very much by the attempts at remedy in giving nourishing food, stimulants, and blistering, and tonic medicine. We have, in these cases, the greatest prostration of strength; the bronchial tubes being in a diseased state, prevent a due supply of oxygen to the blood, and hence the rapid loss of strength. There is always fever attending the disease, and any strong treatment or over-excitement by cold baths, or want of proper clothing, will inevitably bring on hectic fever, shown by the flushing in the face and rapid pulse. The great object is very gently to stimulate the nutritive organs, and avoid any strong reaction; the food should be plain, and avoid all heating matter; and to remember that it is not the quantity of food that will strengthen in these cases, but a small quantity proportioned to the greatly weakened powers of digestion; all wine, coffee and other stimulants bad. 68, 48, 13¼, 79, 80, 50, 14, 19½, 22, 22½, 23, 26½, 45, 45⅝, 50, 52, 61½, 62, 65, 68, 71, 72, 72½, 74, 79, 81, 82, 93, 99½, 108, 110½, 114, 115½, 128, 130, 131, 132, 133, 137, 141, 143, 150, 153, 153¼, 157, 177, 178, 179, 180, 184½, 186, 193½, 195, 196, 197, 198, 198½, 199, 200½, 205, 207, 208, 210, 212, 213, 218, 219, 222, 226.

HEART DISEASE.—The following are the most generally suitable baths. Heart irritation comes on from stomach complaints, female stoppage, and from general nervousness, but these baths are safe for

all. Heart disease is rare. Many are unnecessarily alarmed at palpitation, which is a common result of nervous debility, without any disease of the heart. The object to be aimed at, in cure or relief, is by soothing the nervous system, and especially causing stronger circulation in the lower parts of the body, and also in the arms, and promoting healthy action of the stomach and bowels by gentle natural means only. 14, 19½, 22, 22⅔, 31, 50, 52, 70, 73⅔, 104, 115½, 115⅔, 137, 141, 143, 150, 153½, 153½, 157, 159, 160, 161½, 176, 179, 208, 210, 212, 213, 221.

DROPSY.—General baths. The object to be aimed at is to produce perspiration without injuring the digestive powers, keeping the skin warm and active. 19½, 24, 25, 25½, 33, 35½, 47, 48, 57¾, 59, 61½, 69, 98, 122, 130, 140, 141, 141½, 143, 144, 153½, 159, 160½, 161½, 162, 163, 165, 168, 168½, 169, 206, 214, 222, 223, 225.

LIVER DISEASES.—The liver being the principal purifier of the body, as well as having an important office for enriching the blood, any derangement becomes of serious consequence. Pain or uncomfortable feeling under the right ribs, or in the back, betwixt the shoulders, yellowness of the skin—especially in the white of the eye—and strong fur back part of the tongue, are all symptoms of deranged liver. If these first symptoms are not attended to and remedied, the liver becomes hardened, and no cure is possible. The treatment must be with a view to restore the vital power of the organic nerves of the liver, and all simply cold treatment will only further congest the already congested organ. Rest from all excitement or great fatigue, mental or bodily, is necessary for recovery. Calomel and all purgatives will only reduce the vital power, and all stimulants further congest it. Care must be taken not to take many hot baths for the body, but hot treatment must be applied locally, and much to the lower extremities; warm clothing is indispensable. These baths, without reducing the strength, will stimulate circulation and action of the deranged organ. 14, 48, 64, 46, 14, 19½, 24, 25, 33, 35½, 49, 50, 55, 57, 59, 60, 61, 61½, 67, 69, 73⅔, 75, 93, 95½, 98, 110¼, 115⅔, 122, 127, 130, 133, 137, 141, 143, 144, 153½, 156, 160, 163½, 168, 169, 170, 172, 175, 199, 206, 210, 211, 215, 223.

STOMACH COMPLAINTS.—NERVOUS DYSPEPSIA.—14, 13, 15, 19, 48, 24, 25, 31, 35, 44, 44½, 50, 52, 57⅔, 62, 64, 69, 70, 70½, 73, 73⅔, 76, 77, 78½, 90, 92, 93, 99, 112, 114, 115, 115½, 115⅔, 121, 128½, 130, 130½, 133, 137, 141, 143, 153½, 153½, 154, 157, 158, 160, 163, 163½, 169, 170, 172, 174, 195, 204, 206½, 210, 212, 222, 229, 230.

DELIRIUM TREMENS.—115, 231, 14, 7, 8½, 9, 50, 52, 55, 61½, 62, 64, 69, 75, 77, 79, 90, 92, 98, 99½, 115, 115½, 115⅔, 128½, 130, 135, 137, 141, 153, 153½, 163½, 173, 186, 130, 206½, 210, 212, 215, 218, 219.

ORDINARY TONIC TREATMENT.—1, 4, 8, 9½, 16, 17, 18, 21, 30, 32, 36½, 36½, 54, 56, 83, 95, 99, 100, 101, 105, 106½, 109, 111, 112, 116, 120, 124, 125, 126, 128½, 130, 154, 155, 163½, 199, 200, 205½, 206, 210, 229, 230.

VERY DELICATE TREATMENT.—2½, 7, 13½, 13¾, 14, 17, 19½, 22, 23, 24, 25, 26½, 30, 31, 35, 44½, 48, 50, 52, 57⅔, 64, 65, 66, 70, 70½, 72, 72½, 73, 73⅔, 74, 75½, 75½, 78½, 92, 93, 94, 96, 99½, 108, 110½, 112, 113, 114, 115, 115½, 115⅔, 116½, 119½, 120, 121, 123, 126, 127, 128, 130, 131½, 132, 133 137, 141, 142, 143, 150, 155, 157, 158, 159, 160, 161, 161½, 162, 163½, 168, 168½, 169, 171, 172, 175, 177, 178, 179, 180, 181, 182, 186, 187, 188, 189, 193½, 195, 198, 198½, 201, 207, 207½, 210, 212, 215, 221, 222, 223, 224, 225.

CONSUMPTION — INCIPIENT OR JUST BEGUN.—10, 13½, 13⅔, 22, 23, 25, 26½, 68, 72, 72½, 77, 106, 141, 142, 153, 153½, 156, 177, 180, 186, 195, 196, 198, 207, 210, 212.

WOMB DISEASES, and weakness of the parts in connection with it, are often brought on by pretended curative applications; very serious and sometimes fatal consequences ensue through the unnatural applications of caustic, leeches, alum injections, and the use of the speculum, which always causes injurious irritation. Regular attention to sitz baths, and especially to No. 216, would effectually prevent, in most of the cases, any disease occurring; but when there is derangement of this organ, attention to the mild treatment here laid down will be found efficacious, and, in the generality of cases, nothing beyond will be needed. 2½, 105⅔, 9, 13, 105½, 35, 44½, 45, 57⅔, 61½, 59, 75½, 92, 93, 94, 95, 95½, 98, 99, 99½, 104, 105, 105½, 106, 108, 110½, 114, 115, 115½, 116½, 119½, 121, 123, 124, 125, 126, 127, 128, 130, 131½, 137, 141, 141½, 142, 143, 144, 150, 152, 153½, 153⅔, 157, 160½, 161, 161½, 163, 164, 166, 167, 168½, 169, 186, 188, 195, 212, 216, 217, 222, 223, 225.

BATH LIST.

OUR peculiar body bandages, as 163, &c., our chest and spinal compresses, as 177, &c., 183, and leg packings, 214, &c., are most important points in our treatment for the cure of any ailments, or for the preservation of health. They conserve heat without interfering with the internal economy, and are always safe, and never can do injury in any case; they can be thrown off when not necessary without risk.

JANUARY, 1873.

1 **Cold Dripping Sheet,** standing on flannel pad, with 12, dry rub; keep the dry sheet on while having 73½ or 237.

2 **Hot** wet sheet followed by cold one; then 12 with 73½, or 237.

2½ **Hot Wet Sheet** rub over, then cold sheet over it; drop both; then dry rub 12, 12½, keep dry sheet on, and have 73½, or 237.

3 One hot sheet and two cold, 73½, 237.

4 Hot and cold sheet, partially wrung out, 12, 73½, or 237.

5 Two cold sheets, one after another, 73½ or 237.

6 **Tepid** sheet, 70 deg.; keep dry sheet on, and have 73½ or 237.

7 Ditto, pad 90 degrees to chest; 12, keep dry sheet on and have 73½ or 237.

8 **Cold** dripping sheet, stand on flannel pad, hold hot pad to front, drop pad and dry rub over with 12, 12½, keep dry sheet on, and have 73½ or 237.

9 Sheet 90 deg., then 12, keep dry sheet on, and have 73½ or 237.

9½ Sheet 90 deg., can of cold dashed at the back while wet sheet is on, then 12, 12½, 73½, or 237.

10 **Sponge Over** 80 deg., standing on flannel pad, then 12, keep sheet on, and have 73½ or 237.

11 Ditto, cold.

12 Rub over with dry sheet, feet on flannel pad, 73½ or 237.

12½ Ditto, and then rub over with dry flannel sheet.

13 **Hot Soaping,** 10, 12, keep dry sheet on, and have 73½ or 237.

13½ Do. with flannel sheet dipped in hot soap suds, exceedingly pleasant and soothing.

13½ Hot soap over with pad, then rub the body dry with sheet, then rub over with tepid vinegar and water and hand. Delicate patients, do part of the body at a time; then cover that part before doing rest of body.

13¾ The tepid vinegar and water sponging without the suds safely stops sweating, and invigorates.

14 **Sponge** over with sponge partly squeezed out of 80 deg. water; body covered over with blanket, standing on flannel pad, then 12, keep dry sheet on, and have 237.

15 Ditto, sponge partly squeezed out of cold, keep dry sheet on, and have 73½ or 237.

16 Stand on hot pad, and have several cans of cold water **dashed** on the back part of the body; hot pad to stomach, then dry rub, keep sheet on, and have 73½ or 237.

16½ Ditto, 70 deg., water.

17 **Pouring** on affected limbs, if on the knees, as follows; if on other parts, on the same plan:—Use the water 90 deg. and 70 deg. out of two large cans, pouring them on alternately; place the foot in hot mustard and water in a small foot-bath, and that in a shallow-bath, then cover the foot-bath with a piece of mackintosh, so as to prevent the water that is poured from cooling the foot-bath. Also place a hot fomenting pad all over the thighs. After pouring the alternate cans of 90 and 70 deg. for four or five minutes, then rub the affected part with hot mustard and water with the hand, for two minutes, gently, or with 237; feet wiped with tepid towel, and dried with hand till warm.

17½ Pouring with 90 deg. and 70 deg., without the other part.

17¾ **Weak Ankle,** or any weak joint, use 17½, rub dry, then rub with neat's foot oil, varied with chillie paste, then dry spongio gaiter covering top of foot and ankle: if no spongio, with dry wash-leather and flannel.

18 Rub over with **Sheet** partially wrung out of cold water, then 12, 12½, keep dry sheet on, and have 73½ or 237.

19 Ditto, out of tepid.

19½ Ditto, with blanket over sheet, standing in hot mustard; wrap both sheet and blanket round the body, and well rub over blanket for a minute or two, quickly remove the sheet, and rub with dry flannel sheet, rub feet and ankles with tepid towel, and dry rub with hands after, keep sheet on, and have 237.

20 Towel rubbing cold, hot pad to bowels, No. 13 first, doing upper part of body, and then covering that part before doing lower part, then 12; keep dry sheet on, and have 73½ or 237.

21 Ditto, without 13.

22 Ditto, **Tepid** towel, and 12½, 237.

22½ Ditto, with 1½ yard of flannel towel, and ditto.

23 Warm pad to chest while applying small mustard poultices between the shoulders; feet in hot mustard, and afterwards rubbed with tepid towel, 12, 12½.

24 **Dry Rub Over** whole body with hands only, covering body with blanket; feet on flannel, and 237.

25 Ditto, with dry mustard.

25½ Ditto, with chillie paste.

26 **Rub** over the upper part of the body, in bed, with wrung-out sponge cold; put on flannel vest, then sponge over lower part, and rub dry.

26½ Ditto, tepid.

28 **Shallow,** 70 deg., quick rub over while in, then dry rub and 73½, or 237, with dry sheet on.

29 Pail of cold over shoul-

ders and back, 12, 73½, or 237, with dry sheet on.

30 80 deg. shallow, well rub while in, 12, 73½, or 237, with dry sheet on.

31 Ditto, 86 deg., ditto.

33 **Shallow**, 96 deg., 4 minutes, then 13, 12, and 73½, or 237, with dry sheet on.

34 Back spout in shallow.

35 Shallow, 90 deg.; lower it gradually to 80 deg., rubbing the body while it is lowering, 12, 73½, or 237.

35½ Ditto, 96 to 105 deg. 5 to 15 min., some melted soap in, 12, 73½ or 237, keeping dry sheet on.

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36 **Douche**, 12, 73½ or 237.

36½ Ditto, standing in hot mustard and water.

36¾ Ditto, hot pad to front, 73½ or 237.

37 Ditto, hot sheet first, and 12, 73½, or 237.

37½ Hot spouting on affected parts, followed by No. 149 and chillie paste rubbing.

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38 **Wet Pack.** Spread a mackintosh sheet, or thick quilt, on a mattress, and over that two dry blankets, then take a small thick cotton or linen sheet, dip it in tepid water, and wring the water out as much as possible. This is best done by two persons, the sheet being doubled, one taking hold of each end and twisting whilst any water can be got out. The patient, undressed, lies down upon the back on the wet sheet, holding up the arms while one side of it is thrown over the body and tucked in; then the patient puts the arms down by the side of the body, and the other part of the wet sheet is thrown over and tightly tucked in, one side of the blanket is then put over and tucked in, then the other half, and then mackintosh sheet in a similar manner; a bed, or plenty of clothes, is next put on the patient, so as to keep the body warm. Put a small pillow on each shoulder, or more clothes, to keep the warmth better in about the throat and shoulders; hot can to feet. 14, 12, after, then keeping the dry sheet on; have 73½ or 237.

39 Ditto, sheet wrung out of hot.

40 As 38, with a hot pad for the back, and only hot can in front over blanket for the kidneys.

41 As 38, with **Hot Dripping** sheet first, or vapour, to promote perspiration.

42 As 38, with **Legs in hot** foment pads; hot can to feet.

42½ No. 38 one hour, then slight 51, or hot dripping sheet, 14, 12, 73½, or 237, keeping dry sheet on.

43 **Trunk** pack, hot can on front, over blanket, one hour, 12, 237.

44 Ditto, pack sheet wrung out of hot.

44½ Ditto, the sheet wrung out of hot mustard and water, then No. 12, and replace body-bandage.

45 Towel pack, then 12, with or without 73½ or 237.

45½ Do., with flannel towels.

46 **Fomenting Pack**, as 38, with a flannel pad, 21 in. square, five thicknesses, wrung out of hot water, behind and before, next the body, hot can under first fold of blanket, over the stomach, usual time, 1 hour to 1½; then 14, 12. Keep dry sheet on and have 73½ or 237.

47 Do., with hot fomenting pads to legs.

48 **Liver Pack**, fomenting under right ribs and stomach for 10 minutes gently, then rub the part dry, then mustard plaister over liver till the part is red; thin linen or muslin next the skin, under the plaister, then cover up with blanket, and lay small hot fomenting can over for ten minutes; hot can to feet.

49 **Liver Pack.** Double a towel in four, wrung out of tepid water, lay it over the liver, then a fold of flannel or small blanket over, then small fomenting can over the blanket three-quarters of an hour; hot can to feet, rub the part with dry towel or sponge squeezed out of tepid water, then put on a piece of spongio slightly sprinkled with hot water, and 168¾ or 234.

50 **Stomach Pack.** Double a towel in four, squeeze it out of tepid water, lay it over the stomach and bowels; then double a small blanket in four, lay it over the towel; then either the small or whole hot can betwixt the folds of the blanket over the stomach; with or without tepid wet head bandage on, and mustard poultices on soles of feet, 1½ inch broad, so as to touch only the soles of the feet; lie in this pack 20 minutes, then sponge over the bowels with a sponge squeezed out of tepid water, and 73½ or 237.

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51 **Steam Bath** six or eight minutes, soaping and rubbing body well with pad while in, then 10, 12, keep dry sheet on while having 73½ or 237.

52 Ditto, and sponge over with water 70 deg. in box.

55 Ditto, and shallow 70 deg.

56 Ditto, and **Douche**, 12, 73½, or 237.

57 Hot sheet before steam bath.

57½ Pour some water 85 deg. over the head and shoulders, while in steamer.

57¾ Hold hot pad to front of body while in steamer, and renew it out of hot water every few minutes.

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58 Steam affected parts, and sponge with 14.

59 **Spirit Lamp**, feet in hot mustard and water, tepid cloth to head, then 13, 10, 12, 73½, or 237. This always safe. Turkish bath dangerous.

60 Ditto, with napkin wrung out of cold water over stomach when the body begins to feel the heat, not before.

61 **Sponge** over with hot soap and water, then hot dripping sheet or vapour before spirit lamp, this where perspiration difficult; afterwards No. 19, 73½, or 237.

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62 **Fomentation** to chest, stomach, and bowels, pad wrung out of hot water, dry blanket and hot can over; not cover up so much as to cause perspiration over all the body; 12, 12½, 237.

63 Ditto, well covered up, and 14, 12.

63½ Foment pad with blanket and mackintosh half-sheet, and ditto to bottom of back and hips for lumbago, 30 minutes or more, with 141; then 12, 238, and put on 169¼, or 233, or piece of dry spongio over loins under 168¾.

64 Gently foment back and front 20 minutes, with pads wrung out of 95 deg. water, then wipe over trunk with towel squeezed out of tepid, 12, 237.

65 Foment pad and small hot can only on chest.

66 Ditto, and after rub all over with sheet partially wrung out of tepid water, 12, 237.

67 **Bowel Foment for Diarrhœa.** Feet in hot mustard water four minutes while undressing, then wrap body in blanket, lay down and put hot can over bowels, and cover up, sipping cold water, or iced water; hot bottle to feet, or 153½; remain till pain is gone. 237, and 233, 234.

68 **Bronchitis.** Foment chest and throat 15 minutes, wipe dry, and then put on mustard plaister; wipe off with *dry cloth*, and put on *dry* chest compress, and 186 dry, 196.

69 **Fomentation only to Stomach** and Bowels half an hour with hot Half Pad and small hot can, then 12, 237, afterwards put on body bandage.

70 Ditto, 30 minutes, gentle foment with half pad without Hot Can, and replace warm pad as it loses its heat, and 237.

70½ Ditto, with dry pad and hot can for diarrhœa, and 237 and 235 dry.

70¾ Ditto, with large mustard plaister over kidneys, and 239, then replace dry body bandage.

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71 **Chest**, throat, and betwixt shoulders rubbed with cold water and hand two minutes, and replace chest compress dry, throw a blanket over person while performing the operation, need not entirely undress; sit, or lie down; 79 after good.

71½ Ditto, with chillie paste.

72 Ditto, with tepid water, and 237.

72½ Ditto, with hot mustard and water till red.

73 Tonic Stomach treatment. Rub stomach and bowels with hand and cold water for three or four minutes, *gently* and lightly, whilst lying down on the back; 237.

73½ Ditto, whilst standing one or two minutes.

73¾ Rub stomach and bowels with warm mustard and water, gently, three or four minutes, standing in hot mustard with sitz bath blanket over shoulders and back; and then No. 12, 237; replace body bandage.

74 **Dry Hot** half pad over chest next the skin, without entirely undressing; then the chest compress over it, and button up the waistcoat to keep in the warmth for 20 minutes, if the warmth keeps up in the pad; if not, renew it. It should not be very hot to cause general perspiration. On removing the warm pad, replace the dry chest compress, the legs during the time in 137.

75 **Dry Foment.** Hot can over stomach and bowels, over one or two folds of blanket 40 min., and wipe part fomented with napkin squeezed out of tepid water; replace compress, and 237.

75½ Ditto, 20 minutes.

75½ Ditto, 10 minutes.

76 **For Digestion,** recline on sofa quiet and silent 20 minutes after every meal, with small hot can or mackintosh hot water bag to stomach over the dress, hot bottle to feet. Cover legs up with rug.

77 Ditto, with feather pillow only, or soft cushion on stomach and bowels; legs and feet covered up.

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78 **Constipation.** If no action and uncomfortable, apply fomenting pad and hot can 20 minutes, then 237, and wear 233, 234 until right.

78½ Ditto, and rub bowels over for a minute or two with hot soap-suds, and after wiping the suds off with a dry towel, rub in a little chillie paste or neat's foot oil with hand, and put on dry spongio or flannel baudage.

79 **Throat Pack** for ordinary sore throat. Napkin wrung out of warm water, two yards of dry flannel wrapped over napkin, wear all night; on rising, wipe throat with sponge squeezed out of tepid water, and rub with mustard or chillie paste; keep throat well wrapped up till well, and wear respirator, and if in cold weather night and day.

For severe throat cases, the following never fails to cure if persevered in, nothing but simple diet, no stimulants, or animal food, or medicine, or tobacco. Desperate cases have been cured by this process without possibility of injury.

80 Ditto, with **Flannel Wrapper** wrung out of hot water, instead of napkin, then dry flannel over it one hour, renewing the hot flannel as it cools; then pack with napkin wrung out of tepid, and dry flannel or 163 over, and keep on all night; in the morning wipe throat with sponge squeezed out of tepid water, and rub throat and neck with chillie paste or mustard and water; cover up throat well; and if cold weather wear respirator night and day; keep indoors till well.

81 **Mustard Plaister** to throat and top of chest; wipe off with dry paper, then put round the throat a piece of spongio sprinkled with warm water; dry flannel wrapper over it, keep it on all night; in the morning wipe throat with sponge squeezed out of tepid water; cover throat up well as above, and keep respirator on night and day.

82 **Throat Foment.** Take a yard of flannel, fold it in four lengthways, wring it out of hot water, wrap round throat, and one yard and a half of dry flannel over; renew every 15 minutes for hours, or till relief is had; wipe throat with napkin squeezed out of tepid water, then put on piece of spongio quite round neck, sprinkled

with a little warm water; dry flannel wrapper over; rub throat with chillie paste or mustard and water; 137, 141 useful, and of course the body bandages 233, 234, with 48 sometimes, to get liver in action; purgatives, caustic, or opiates destructive. Wear respirator night and day till well. No medicine, stimulants, tobacco, condiments; take farinaceous diet. This has saved life in many cases, where they had patience and confidence in this natural treatment; keep in-doors till well.

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83 Sitz Cold, ordinary sort (see Cut.)

85 Ditto, 65 deg.

86 Ditto, 70 deg.

87 Ditto, 80 deg.

88 Ditto, 90 deg.

89 Ditto, 100 deg.

90 Ditto, 80 deg. eight min., run cold in one min.

91 Ditto, run down to 65°.

92 Soothing Sitz, 80 deg., hot pad on knees and feet in hot water, and well covered up ten minutes, then dash feet in cold and dry rub them, then 73½, or 237.

93 Soothing Sitz when vitality low, 90 deg., **Hot Pad** to chest and back eight minutes, feet in hot, run down to 80 before coming out, if convenient, 12, 12½.

94 Ditto, without pads.

95 Sponging Sitz. For ordinary rising treatment see Home Treatment in Index. Spread mackintosh sheet on the floor, put the ordinary sitz bath upon it about half full of cold water; kneel down, and 128½; then sit in the bath with the feet out, and sponge the front of body, then stand in sitz, and sponge legs, and squeeze spongefuls of water over shoulders and spine, then 73½, dry the body with a linen or bump sheet; this for persons in health, but some in health cannot stand cold water; in that case use tepid or warm.

95½ Ditto, avoid putting legs into the water; sponge the legs with sponge partly squeezed out of cold; dry with sheet.

96 Ditto, **Tepid,** as 95, in cold weather; or if vitality low see Home Treatment in Index.

The following is a most excellent and safe bath, and easily done; will save persons from fever, or congestion of liver, if applied at night, when cold or out of order:—

98 Sitz, 100 deg., ten minutes; dip a pad in the hot water, and lay it over the back of bath, one over chest and bowels, one in bottom of bath; keep arms well down in water and have blanket covering with the head out, then have soaping and a tepid sponge over, standing in the hot water, then 12, 12½.

99 Hot Sitz two minutes, then well soaping, standing in the hot sitz, then tepid sponging quick, and 73½, or 237. Good for morning bath where cannot stand cold.

100 Sitz; sit in **Empty,** and let cold water run in three minutes. Put body bandage on to sleep in; keep it on next day if agreeable. (See Running Sitz Cut.)

101 Ditto, sit in empty, run cold water in till full, then stop the tap, and remain in three minutes.

102 Sitz, filled with water, 100 deg.; sit in 10 minutes, and then run cold in one minute; put sitz blanket on, with hole for the head while in, and have feet wrapped in flannel or piece of blanket. (See Cut, Running Sitz.)

103 Sitz, 65 deg., five minutes, and cold running one minute, and as above.

104 Sitz, 85 deg., 10 minutes, at eleven in the forenoon, and at four in the afternoon, and every day lower the temperature 4 deg., and increase the time four minutes, till it comes to 65 deg. and 25 minutes, and as above, sitz blanket and feet covered.

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105 Ladies' Sitz is my invention, and can be used by ladies or gentlemen without undressing. It is equally useful for males as females; the use of it two or three times per day, cold or slightly tepid, for a minute or two would prevent serious ailments; as a running sitz it is invaluable. (See Cut.)

105½ For Piles. Ladies' sitz, with tepid vinegar and water three or four minutes, several times per day, then 119½, or sponge the part well with nearly cold water; if painful piles, 58, 105½.

105½ Ladies' sitz, 80 deg. suds, three or four minutes, then 119½ half a minute, or tepid sponge part.

105½ Ladies' sitz, 90 deg. eight minutes run down to 80 deg.

106 Ditto, cold, two min. every two hours.

106½ Ladies' running sitz. All these ladies' sitz are made running sitz. (See Cut.)

107 Ditto, 70 deg. four min., and one minute cold running. Soothing and strengthening.

108 Ditto, 80 deg. five min., and 60 deg. four minutes.

109 Ditto, sit in empty, turn cold in till full, and remain in a few minutes. Very bracing.

110 Ditto, 85 deg. five min., and one min. cold running. Soothing.

110½ Ditto, holding pad to stomach, wrung out of 90 deg. water, or dry hot pad, 73½; cover feet while using this.

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111 Spinal Rubbing, gentle, sitting in cold sitz, with blanket over front, feet in hot mustard and water, warm pad to stomach one minute, invigorating, and 73½.

112 Spinal Rubbing with hand and cold water sitting on a flannel pad on a board placed over the sitz bath, the bath with cold water in, feet in hot mustard and water or dry flannel on hot foot-tin; hold a dry flannel pad to stomach; 237 after, or 73½.

113 Spinal rubbing, gentle, with tepid water, and 73½.

114 Spinal rubbing, gentle, with hot mustard water, and one min. tepid water, and pad as above, and 73½. Most excellent and invigorating.

115 Spinal rubbing, gentle, three minutes, whilst sitting in 80 deg. sitz eight minutes, and pad as above,

then 73½. Very soothing and invigorating.

115½ **For Sleep and Soothing Nerves.** Sitz, 85 deg. 10 min., feet in hot mustard and water, tepid wet head band on, and one minute gentle spinal rubbing; then 73½ or 237; rub feet with wrung-out tepid cloth and then with dry; dry the body with a sheet gently and dress.

115¾ **For Sleep, Brain, and Spinal Cases.** Prepare a mustard plaister on brown paper, long enough to go all down the spine from high up the nape of the neck to the bottom of the spine; and one also to cover the pit of the stomach. Lay a piece of the thin crisis calico over the mustard plaister before applying it; this will modify the strength of the mustard, and prevent the mustard adhering to the skin; it will also enable the patient to bear it on much longer, and so produce more benefit. When the plaisters are put on, lay a hot dry flannel pad over each plaister, and well wrap up in blankets, using also 153½ and 215 at the same time. This is very useful in brain or spinal cases, or any sluggishness of the system. This has done wonders in producing sleep and soothing the nerves. It is our sheet anchor for such cases, and cannot possibly do any injury. Many thousand successful cases can testify to the benefit of this invaluable simple operation. It has been given with perfect success in railway collision cases, or any injury of the spine.

116 **Spouting** spine, cold water, gently, then 128.

116½ Ditto, tepid.

117 Cold spouting affected part, and 237.

118 Hot spouting ditto, tepid after, and 237.

119 Ascending douche, cold.

119½ Tepid ditto.

The following back washes are most efficacious, soothing, and invigorating applications, without the least risk of injury to the most delicate.

120 **Back Wash**, sit over sitz bath with cold water in, dip towel in water, draw it over the back several minutes, feet in hot mustard and water, 90 deg. pad to stomach then 128, 73½ or 237.

121 Ditto, 90 deg. and 65 deg., several minutes alternately; sit on hot pad, feet in hot mustard, 128, 73½, or 237.

Very important operations, as under.

122 **Back Sponge**, for soothing the spine and heart's action invaluable, as follows: sit over sitz, and have 90 deg. water in, sponge spine downwards gently, have hot water running into the sitz slowly, till it increases to 100 or 105 deg., then turn cold water into the sitz slowly, and go on sponging till the water is quite cold, occupying eight minutes altogether; sit on warm pad, feet in hot mustard and water; well cover front of body with blanket, 73½ or 237, 233, 234.

122½ Not higher than 90 deg. nor lower than 70.

123 **Pour** two or three **cans** of water 80 deg. down spine, sitting over sitz, feet in hot mustard and water, dry rub spine, 90 deg, pad to stomach, and 73½ or 237 very soothing and invigorating.

124 Ditto, 70 deg.

125 Ditto, **cold.**

126 Spinal **slapping** with hands and cold water, one hand quickly and very lightly and gently following the other, three min., sitting on warm pad over sitz, feet in hot mustard and water, and warm pad to bowels, slight 237 to spine.

127 Ditto, with cold water and **mustard**, or 237.

128 **Dry Rub Spine** very gently until warm with dry mustard and hand, soles of feet in hot mustard water, 73½ or 237, very good for delicate cases.

128½ Ditto, with chillie paste.

128½ **Sponge** back of head and forehead, with warm water.

129 **Head Bath**, warm, 10 minutes, sponge on forehead, tepid, soothing and strengthening to eyes and head.

130 Wash head with warm soap and water, then sponge with tepid water.

130½ **For Sleep.** Pour tepid water over the head for three or four minutes or more.

131 Ditto, head bath, 70 deg., eight minutes, quiet, very good.

131½ Ditto, ditto, and foment eyes at same time with small pads wrung out of 90 deg., to prevent inflammation and to restore circulation excellent.

132 **Head** well rubbed with cold water and hand, well opening the hair, very good for headache.

133 Ditto, and hot mustard hand and foot bath, same time.

134 **For Sleep**, put on a cotton night cap, wrung out of tepid water, then a thick flannel one over it, well covering the ears, and sleep in them and in wet and dry socks, and on rising sponge the head over with tepid water.

135 **Deafness or Erysipelas.** Six inches square foment pad, wrung out of hot water, on each side of the head, while lying down; wrap the head up well in dry flannel or piece of blanket, renew the hot pads every 15 minutes for one hour, then No. 134. Repeat all this twice a day, or once in the day and at bedtime, or bedtime only; keep the face constantly covered night and day till inflammation gone. (See Index for Deafness, and also for Erysipelas.)

136 **Sniffing Bath**, for affection of the nose or frontal sinus, stuffing in the head; take a flannel pad three thicknesses, the length and breadth of a hand, squeezed well out of hot water, and lay on forehead; then a cold wet bandage over it, wrapped round the head; have a basin of tepid water, put the nose in and sniff up the water until it returns through the mouth, and spit it out. The water can-

not always be brought through the mouth on the first trial, but will be accomplished by a few attempts; the application four or five minutes at a time, and three or four times per day, has cured bad discharge from nostrils and headache, and expelled decayed bone.

186½ Slight sniffing, without bringing the water through to the mouth.

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137 Hot Mustard Leg bath to above calves, then wipe over with tepid towel, and dry rub, rubbing upwards.

138 Ditto, to above the knees.

139 Leg Bath, 90 deg. or just comfortably warm, 30 minutes, for inflamed or sore legs, afterwards wrap legs in dry flannel.

140 Steam Legs, and No. 17½ after.

141 Hot mustard towel pack thighs, legs, and feet as long as can be borne; then rub dry with a dry cloth, rubbing upwards.

141½ Sciatica. — Steam affected part; then 17. (See Index, Sciatica.)

142 Wet Pack Legs only, with usual thick cotton sheet, blanket and mackintosh sheet three-quarters of an hour, each leg separately, sponge with 14, then dry rub upwards, soothing and invigorating.

143 Foment pack legs, with hot pads 40 min., dry blanket, and mackintosh sheet, and rub with sponge or cloth squeezed out of tepid water, stimulating and soothing.

144 Sciatica or Weakness in Legs. Foment **Lower Part** of back, bowels, and legs, with pads before and behind, ½ hour or more, and then rub with tepid wrung-out towel and dry mustard, or 237; wear good lamb's-wool stockings; must keep legs and feet warm. (See Index for Sciatica.)

144½ Rheumatism in Knees. Spongio knee-cap, dry rub and then with chillie paste.

144½ Sprains of knee or ankle joints. (See Index, Sprains.)

145 For Leg Crisis, when hot or irritable; first have leg-bath tepid, just comfortably warm, not hot, for 20 minutes, keeping up the temperature by adding more warm water; then lie in bed, put a piece of mackintosh to prevent wetting it, and on that a piece of flannel, then dip cloths in water 70 deg. and lay them loosely round the limb; then a single piece of flannel loose over the wet cloths; keep renewing the wet cloths as they become hot, go on repeating them till irritation and heat are gone; this is applied in the last stage of crisis, and when the discharge has nearly ceased. This especially for crisis when hot and irritable; but if crisis becomes dark coloured, stop and foment, and re-pack with usual wet bandage, flannel, and mackintosh, until the part is red, keep part constantly covered from the air.

146 Sponge legs if matter on gently, with hot soap and water during 145.

146½ Sore Legs, or inflamed legs or joints, wound or no wound. When deep wounds, and strongly inflamed, then use No. 220, applying 150½ two or three times a day; oatmeal in the warm water occasionally, instead of warm suds. As soon as this has removed the offensive matter, and well cleansed the wound, then apply washleather well squeezed out of hot water, and either flannel or spongio, or both, over the washleather; and use 223 only for leg, till all inflammation and pain are out. Then only the dressing renewed and the No. 17½ applied. This latter treatment will strengthen the leg much; and when able to bear it, omit the can of 90 deg., and use only 70 deg., or cold, till well. When general pain in leg, but no actual sore, then 214 should be applied till crisis is produced, and then use 145. At the same time, the general health should be strictly attended to; little or no flesh meat; entirely abstain from stimulants and tobacco, or no use.

147 Evaporation for any part under painful crisis, apply on the bed as 145, but use cloths squeezed out of hot water.

147½ After the above operation has removed all matter, and the skin only remains tender, apply silk stockings or wash-leather in the following manner:—After putting on the stocking or wash-leather, squeezed out of warm water, slightly sponge over with sponge squeezed out of tepid water, then dry merino or lamb's-wool stocking over, or strips of flannel. The silk or wash-leather dressing must not be removed until the skin is sound; but whenever leg is uncomfortable, slightly sponge over the silk or leather without taking them off. This plan hastens the formation of good skin by preserving it from the air and from being rubbed.

148 Immerse the part affected in water 90 deg. frequently; and gradually as the inflammation subsides lower the temperature till tepid can be used with comfort, with or without oatmeal.

149 Rub Weak part with the hand and cold water three or four minutes, while the part near is kept warm either with hot pads or hot mustard and water. Finish with chillie paste or mustard and water.

150 Ditto, rubbing with **Hot Mustard** and water.

150½ Immerse the part affected in hot soap-suds half an hour two or three times per day, then dress as 151.

151 To Dress Boils, take three or four folds of old linen lint or wash-leather, size of the place, squeezed out of hot water, then piece of spongio wetted, larger than covers the place, bandaged on over the linen or wash-leather and spongio with strips of linen or calico; this dressing must be rewetted often; the cooler the place is kept the sooner it will heal. No. 220 also good, if very inflamed.

152 An Enema of about a quarter-pint warm soap

and water. An India-rubber bottle the only safe way.

152½ Ditto, with Condy's Fluid eleven parts water good for irritation or worms, and quite safe to use; it is also very good for mouth-wash.

152¾ With warm water or gruel and dessert-spoonful of glycerine.

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153 Mustard Plaister to soles of feet for cold feet, one and a half inch broad, and dry socks to sleep in. (See Darlow's magnetic socks, Index.)

153¼ Mustard plaister to affected part till red.

153½ Hot brick to feet with wet mustard cloth over brick, in bed or sofa.

154 Foot Bath, stamping in cold water two minutes, water only covering toes. These foot baths and hand baths good to get circulation, and always safe.

155 Hot Foot bath, four minutes, then stamp in cold two minutes.

156 Hands and Feet in hot mustard and water several minutes, then dash in cold water and rub dry, then dry mustard to soles of feet.

157 Foot and Hand Bath, 90 deg., mustard and water, well rubbing them whilst in, or well moving them, four to six minutes, then rub with tepid towel and dry hands.

158 Have **Hands** and feet rubbed with cold water and hand, for three or four minutes, till quite warm.

159 Soles of Feet in hot mustard and water, whilst legs and thighs are well dry rubbed upwards with dry hands; dash feet in cold water after taking them out of hot.

160 Ditto, ditto, rub with dry mustard.

160½ Ditto, with chillie paste.

161 Ditto, rubbing with mustard and hot water, putting hot pads to thighs.

162 Palms of hands in hot mustard and water, and hot pad to shoulders, after rub the arms as above for rheumatism.

The following variety of bandages are made to suit all cases, strong or delicate. Their use is all-important, and can be left off any time without injury.

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163 Body bandage, jaconet mackintosh and swansdown calico 9½ in. broad; calico part wrung out of tepid water, renewed morning, noon, and night, or morning and night, flannel wrapper over in night; 34 in. mackintosh and 24 in. flannel.

163½ Ditto, wet only the part over bowels.

163¾ Ditto, in night only.

163¾ Only every other day.

164 Ditto, as 163, worn from **Rising** to **Noon,** and from four o'clock to bed-time, and when bandage taken off, replace with single dry flannel bandage.

165 As 163, with flannel wrapper over, in night and in day also, if 163 not warm.

166 Body bandage, **Mackintosh** and **Flannel** Mackintosh part sponged slightly with tepid or cold water, worn all day.

167 Ditto, from **Rising until Noon,** and from four o'clock until bedtime. Replace with dry flannel bandage.

168 Ditto, night and day.

168½ Water dressing body bandage slightly sponged with tepid. This is swansdown calico mackintoshed on one side, 9½ broad, 34 in. long, and 24 in. single flannel at the end.

168¾ Ditto, with a loose piece of spongio 8½ by 7 over stomach.

169 Spongio body bandage and flannel all day, spongio part to cover the bowels, and sprinkled or sponged with tepid water, but not too wet, or it will drip, and be uncomfortable.

169½ Spongio part to go quite round body.

170½ As 169, with a piece of spongio over bottom of back.

171 Dry Flannel body bandage, all day.

172 Ditto, over wet bandage.

173 Body bandage, swansdown calico only, and wet as much as will go round the body, and dry flannel over.

173¼ Dry ditto, in night only

173½ **Crisis Bandage,** four thicknesses of jaconet calico, rubbed till soft, wrung out of tepid water, put round the body, and a single dry flannel bandage over, washed and renewed every two or three hours, washing the crisis part every time gently, with warm soap and water, but not to rub the parts; if any discharge, a second bandage should be ready, to have one always well washed and ventilated.

173¾ Crisis bandage for legs when the mackintosh is left off, two thicknesses of crisis calico, wrung out of tepid water, and kept damp by sponging carefully without removing oftener than once in 24 hours, when not much discharge; a dry flannel bandage must be worn over all.

174 Piece of Spongio, 8½ by 7, dry or damp, to **stomach.**

174½ Ditto, spongio 17 by 7.

175 Ditto, on liver, 8½ by 7.

176 Ditto, on heart, 8½ by 7.

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177 Half Chest Compress, oil silk and flannel with collar, night and day, dry or sprinkled with tepid water. (See Index for Cut of Compress.)

178 Ditto, **Spongio,** dry or slightly wetted.

179 Chest Compress, **Full Size,** silk and flannel.

180 Ditto, **Spongio,** dry or slightly wetted.

181 Half Chest **Swansdown Calico,** silk and flannel. Calico part wrung out of hot water, this is warmer than 183.

182 Full size ditto.

183 **Half Chest** compress, double **Swansdown Calico** one thickness wrung out of water.

184 Full size ditto.

184½ Dry flannel, half chest compress, with collar to wear in summer.

184½ Without collar.

184¾ Full size dry flannel, with collar.

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185 Spongio jacket complete, with short sleeves, tied in front, for low vitality.

185½ Ditto, oil silk and swansdown calico fastened at the back for skin disease, calico squeezed out of warm water.

185¾ **Drawers** of same.

186 Spinal **Compress,** silk and **FLANNEL,** dry or damped.

187 Ditto, silk, and SWANSDOWN CALICO.
188 Ditto, SPONGIO, where low vitality.
189 Ditto, single dry SWANSDOWN.
192 **Wet Silk Gloves** worn constantly wet, and wetted by putting the hands into tepid water without taking them off; this will take off all heat of hands, or heal rough sore hands.
193 Cotton gloves wrung out of tepid, and woollen over, worn day and night.
193½ In night only.
193¾ Sweating Feet. (See Index.)
194 **Cotton Socks** wrung out of cold water, and dry woollen over, to sleep in, for cold feet, rub soles with dry chillies or mustard. (See Darlow's magnetic socks, Index.)
195 Ditto, wetting only the soles of the cotton socks.
195½ Sciatic leg case. This is made of jaconet mackintosh, lined with flannel, to go over hips and down to ankle, made separate for either right or left leg.

196 Maw's respirator on going out. (See Index.)
197 Sleep in respirator in bronchial cases very good.
198 **Short Jacket** of merino or flannel, with short sleeves and collar, to sleep in, and flannel scarf round the throat, for the delicate or bronchial affection.
198½ Complete hosiery merino or lambswool dress to sleep in; for delicate persons very good.
199 **Galvanism.**
200 **Gymnastics.**
200½ Special ditto.

For strengthening the eyes and preventing inflammation.
201 **Eye Glasses,** use 70 deg. water five minutes. Eye glasses can be bought at druggists'.
202 Ditto, cold three minutes.
203 Ditto, 90 deg. three minutes, and cold two.
204 Steep forehead, face, and nose in cold water, and sponge head with warm.
205½ Eye Douche cold.
205½ Ditto, tepid.

206 Sip water often during day.
206½ Cold ginger tea.
207 Tea-spoonful of **Cod Liver Oil** after breakfast and after tea.
207½ One tea-spoonful at bedtime.

DIET.

208 **No Flesh Meat,** only gravy, and a little vegetable or rice, and the usual farinaceous puddings.
209 **No Vegetables,** only boiled rice and cold meat, or plain sandwich; no puddings.
210 **Very little** flesh meat, no beef or pork.
210½ Animal food every second or third day, no seasoning, no mustard.
211 **Liver** complaints, very moderate of cold lean mutton, cold chicken or cold game, with bread and cold water to breakfast, dinner, and tea.
212 Cup of cocoa or weak black tea before rising treatment; a cup of beef-tea with a little toast before forenoon treatment.
213 A little arrowroot or sago at half-past eight p.m.

214 Bandaging limbs, first with strips of swansdown calico, wrung out of tepid or cold, then strips of mackintosh or oil silk, plenty of flannel strips over all. Very efficacious for varicose veins or cold legs.

215 **For Sleep** and soothing head. Wet double calico skull-cap frequently renewed out of cold or tepid water, worn all day.
215½ Sponge head with hot water, bedtime; put on fine cotton night-cap, wrung out of cold water, elastic merino, or fine flannel cap dry over, to sleep in.
215¾ Ditto, with oil silk cap over.
215¾ **For Sleep or Soothing Head.** Fine cotton night-cap, wrung out of cold water, hosiery merino or thin woollen or thin flannel cap, dry cap over.

From Mrs. Smedley's Manual.
216 Ladies' present time treatment (*Ladies will understand when to use this*) —if wearing compresses have them dry, then on third night two minutes, ladies' sitz 65 to 70 deg., and damp the compresses in warm water. Fourth day, morning, noon, afternoon, and night, ladies' sitz two minutes, 65 to 70 deg. and damp compresses as above. Fifth day, a two minutes' cold sitz as above every two hours till well. If fifth day unsuccessful, then undress and dash into an ordinary large sitz with cold water in and out immediately, then lie on bed, wrapped in blanket, and have towel rubbing over lower part of bowels and back for two minutes, repeat twice per day and keep quiet.
217 Ditto, not under 70 deg.

218 Ice cream.
219 Iced water.

220 **Bread Poultice,** put in a thin soft calico bag, 10 in. by 7 in., applied to stomach under 163 or 168¾, and 169½ over all in night, one poultice also over kidneys, or to any part wanting vitality, 233, 234, slightly sprinkled with tepid water, a little chillies or mustard sprinkled on the poultice more efficacious, if can bear it. This is most efficacious in indigestion and giving sleep.

221 **Fever Pack,** which has saved thousands from death. Spread a mackintosh sheet on bed, then a blanket, and put a thick sheet well squeezed out of hot water on top of blanket, and let the patient lie upon it with 153½ to feet, and legs packed to knees in hot foment pads, then lay a thick towel also squeezed out of hot water down front of body, bringing the wet sheet well over shoulders and over towel; then well wrap the blanket and mackintosh sheet over all, put skull-cap well wetted out of cold water on head, and a large sponge slightly squeezed out of cold water for the back of head to lie upon; every quarter of an hour have a fresh towel ready for front of body, and partially uncover the patient and remove the other towel

and place the fresh towel in its place; also frequently renew the cap and sponge out of cold water for the head, and if head is very hot, apply a mustard plaister to nape of neck till red, and then a small hot pad on back of head for a few minutes before renewing the sponge, will draw much heat from head. If the fever is high, the above pack may be thus given for several hours, if the patient is not restless in it; but when removed from pack, some warm soap-suds should be ready to well sponge the patient all over with, and dry rub quickly. This pack may be renewed with perfect safety as long as fever is present. Cold water should be freely given to the patient to drink whilst in pack.

222 **Soap Blanket.** Blanket partially squeezed out of hot soap and water, laid upon a mackintosh sheet on bed; lie down on this blanket, and wrap it round whole body and be well rubbed in it, rubbing *over* the blanket; then give 19½, or should patient be unfit to move about, then gently replace the "Soap Blanket," then 12, 12½; dry rub whilst reclining.

223 **Dry Pack.** Spread mackintosh sheet on mattress; also spread two blankets over mackintosh; then, after patient is laid down on blankets, place a hot brick as 153½, and a similar brick on each side of patient, but not to *touch* the body; then well wrap the blankets and mackintosh sheet round the patient, and put a bed on top of all, and if the patient is difficult to sweat, then lay more hot bricks. After a good sweating has been produced, then give a quick sponging over the whole body, with warm soap-suds and 14.

223½ **Swelled Legs, or Rheumatic Gout, or Dropsy.** (See Index.) **Dry Pack** to leg or legs. Spread a small mackintosh sheet on mattress, then one blanket doubled; patient lie down on blanket; place two hot bricks wrapped in napkins, one outside each leg, near calf, one to feet, napkins wrung out of warm water; then well wrap the blanket and mackintosh sheet round legs and feet, to sweat them well from half an hour to two hours, according to strength of patient; 17½ after, then dry rub upwards, and wear lambswool stockings and a spongio gaiter or bandages to keep up warmth.

When no crisis or sores: wring napkins out of mustard and water or hot vinegar and water.

224 **Winter Turban.** Take a strip of flannel, about four inches wide, long enough to go twice round the head. Squeeze half of it out of hot water, and let the other half be dry, to bind over the wet; then put on the skull-cap (see No. 215½). Keep renewing each of these as often as required.

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225 **Bowel Pack** has saved a great many lives. Have two flannel foment pads, five thicknesses, 21 in. square, well squeezed out of strong hot mustard and water; put one on front of body and one on back; bind them well on with blanket doubled in four, lengthways; place a mackintosh sheet same way over all, and 141 or 143, stay in till the patient sweats; then have an empty bath, and place in it a flat tin full of hot water just comfortable to stand upon, sponge down the patient well and quickly with hot soap-suds and 14, and also pour 80 deg. water over head. The above Pack leaves every limb at liberty, but 153½ should be kept at feet, and the head packed as 224.

226 **Chest Pack,** very efficacious and safe. This is very effective in sudden or obstinate attacks of the chest. Take a flannel pad, four thicknesses, full size of chest: wring it out of hot water, lay it on chest, with two thicknesses of dry flannel over, and then full-size silk and flannel chest compress, dry; and put a flannel wrapper round body, over all; let all remain on all night; and in morning, 14, 12, or 12½, put on silk and flannel chest compress, the flannel part sprinkled with tepid water. If no chest compress at hand to put on at bedtime over the other, put so much more dry flannel on; or a cloth waistcoat, buttoned over all, is used with good effect.

226½ For weak sight without inflammation, fill the eye-glasses with water 60 degrees, and in a stooping position, to keep the water in. Then raise the head with the glasses fitting over the eye, and open the eye-lids to allow the water to come in contact with the eye-ball. Keep the glasses on five minutes, then change the water; and while changing let the eyes face the strongest light. Thus go on applying water in the same way five minutes longer, repeat this three or four times a day, after a few days use only cold water. If convenient, pack the forehead with a piece of swansdown calico wrung out of cold water, and oiled silk over, during the application.

Slightly Inflamed Eyes treat as follows:—Use head-bath cold or rather tepid; foment the eyes and forehead for ten minutes with hot flannel pads wrung out of water as hot as can be borne while using the head-bath, then pack the forehead as above with wet swansdown calico, apply the glasses, with water 70 deg. to commence with for three minutes, the next three minutes 60, then three minutes cold; and in changing the water open the eyes and face the light. When the inflammation is subdued, then treat the same as for weak eyes: for accidental injury apply the same. Eye-glasses, or eye-douche, can be bought at any druggist's.

227 **Eyes, Inflammation of.** Invariably subdues inflammation. Use No. 131½, often renewing the pad, to have it as hot

as can be borne; go on with this fifteen or twenty minutes, then No. 201 five minutes, with feet in hot mustard and water; then a small piece of crisis calico and spongio-piline or damp wash-leather wetted and put over the eyes; and a handkerchief over to keep it on: repeat all this several times per day, till the inflammation is subdued. As soon as most of the inflammation is reduced, omit the piece of spongio on the eyes, as they should be kept from the light as little as possible, and continue the other treatment till all inflammation is subdued, then 202 every day to strengthen the eyes. When inflammation is strong, or very painful, use 220 under spongio instead of crisis calico; and when height of inflammation over, use eye douche tepid.

227½ **Deafness.** We have succeeded in curing or relieving cases where it has resulted from weakness of the nerves, or low power of the excretory ducts, by using general invigorating treatment, and the use of bath Nos. 134, 135, 136, also 58, and 220 over ears in night, and damp spongio all day: the 58 should be applied with gutta-percha steaming-pipe, which is supplied with the portable steamer, and is very easily done; the ear douche (see Cut) should be used gently, with 90 degrees water, directly after steaming; and if in cold weather, a little lamb's-wool put in ears, moistened with olive oil or glycerine, or dry, to keep up the warmth in the ear till the mucous lining is restored. The object of this treatment is to restore the secretion of the healthy waxy mucus; care should be taken to keep the glands under the ear warm till the ear is strong.

228 Wounds slow to heal (see Index).

229 **Rain Bath.**

229½ Hot to cold.

230 **Spray Bath.** Tepid to cold.

231 **Soothing Nerves for Sleep.** Keep in bed, with 220 (made with the addition of a small quantity of pounded chillies mixed in with the bread) placed all over stomach and bowels, also one of same on kidneys and on nape of neck, and 169½ and 186 or 180 back and front of body, and dry warm flannel body bandage over all. Keep also 153½ and 224, or 215½ also regularly applied. When all above renewed, if perspiration, then use 22½ with 90 deg. vinegar and water, or 13½ if *much* perspiration, but in doing either be very careful not to expose the body to cold, best do only part at a time. (See 13½, in Bath List.)

232 For irritation of heart or brain, ladies' sitz, with 88 deg. water for 15 to 20 minutes. Keep feet on flat tin with hot water in, without removing shoes and stockings; hold hot water bag to stomach over dress, and have a 220 sprinkled with chillies or mustard kept on nape of neck during the time; use 25 to loins and thighs on coming out.

233 168¾, with 174, over stomach, slightly sponged.

234 168¾, 174, slightly sponged, 169½, dry over in night.

235 Spongio 8½ by 7 inches on 36-inch flannel, 9-inch broad.

236 Ditto, spongio 17 by 7.

236½ as No. 163.

236½ as 163 with 169½ dry over in night.

237 Chillie paste, rubbed over stomach and liver.

238 Ditto, over loins and hips for lumbago.

239 Ditto, over spine and kidneys.

240 Ditto, on joints for rheumatic or gouty swellings.

241 Ditto, rub over chest and betwixt shoulders.

242 As chillie pomatum cannot always be had, use unsalted lard, with pounded chillies mixed in.

APPARATUS FOR HOME USE.—Sitz baths, mackintosh sheet, sponge, sitz blanket, pair of pads for 98, drying sheet, stomach can, foot tin, ten-quart can with cover to hot water, and bandages, compresses, &c.

SPECIAL HOME TREATMENT.

A. On rising, 162 and 161, keeping a warm pad, or 153½, on stomach. Forenoon or afternoon, 157 and 119½; or if 119½ not available, then 105½, and a can of 70 deg. poured through as long as comfortable. Bedtime, 70½, using glycerine rubbing to bowels before and after. Once a week, 222 or 13½.

B. On rising, 126½, or 14, or 12½ only. Forenoon, 48 or 49. Bedtime, 137 and 130. Once a week, 99½.

C. On rising, 123, using 128 before and after. Forenoon or afternoon, 110½. Bedtime, 78½ when required, and when not, then repeat the rising treatment. Once a week, 13½ with 31.

D. On rising, 31, dry rubbing as in 19½, and if chilly, go into 31 with 12½ on. Forenoon or afternoon, 119½ or 109; if latter, use 25 to loins and thighs afterwards. Bedtime, 70 for quarter of an hour. Once a week use 13½ with 31.

E. On rising, 9 or 2½. Forenoon or afternoon, 133. Bedtime, 92. Once a week, 59.

F. On rising, 96 or 13½. Forenoon or afternoon, 143 and 132. Bedtime, 105½ and 128½. Once a week, 115¾.

G. On rising, 114 or 115. Forenoon or afternoon, 74. Bedtime, 131½ and 73. Once a week, 98.

H. On rising have 14 or 15. Forenoon or afternoon, 71; but occasionally use glycerine, and then rub it for a quarter of an hour, and have bare feet against 153½, and lying as 76, so that only the chest is exposed. Bedtime have 226 and 82. Once a week, 13¼ before 14, and then 75½.

I. On rising have 22 or 22½. Forenoon or afternoon, 62. Bedtime, 94. Once a week, 59.

J. On rising have 7 or 19½. Forenoon or afternoon, 74. Bedtime, 70 or 69.

K. On rising have 8½. Forenoon or afternoon, 64. Bedtime, 73¾. Once a week, 13¼ and 115¾.

L. On rising have 95. Forenoon or afternoon, 119½ or 109. Bedtime, 12½. Once a week, 33 or 55.

M. On rising have 8 and 12. Forenoon or afternoon, 155 or 159. Bedtime attend to 78. Once a week, 59.

N. On rising have 32. Forenoon or afternoon, 119. Bedtime, 111 or 112. Once a week have 98.

O. On rising, 124 or 125. Forenoon or afternoon, 108. Bedtime, 157 (and 130 occasionally). Once a week, 69, after 13¼ and then 14 with a little vinegar and water.

P. On rising have 50. Forenoon or afternoon, 141 or 143. Bedtime, 114. Once a week, 222.

Q. On rising have 10 or 11. Forenoon or afternoon, 106. Bedtime, 133. Once or twice a week, 99.

R. On rising have 24 or 25. Forenoon or afternoon, 63 or 64. Bedtime, 105½. Once a week, 223.

S. On rising have 115. Forenoon or afternoon, 131½ and 157. Bedtime, 149 or 150. Once a week, 13¾.

T. On rising have 126 or 127. Forenoon or afternoon, 110. Bedtime, 70½. Once a week, 33.

U. On rising have 7. Forenoon or afternoon, 49. Bedtime, 120. Once a week, 13¼ and 2½ after.

V. On rising have 26½. Forenoon or afternoon, 156. Bedtime, 92. Once a week, 38 or 47.

W. On rising have 111. Forenoon or afternoon, 161 and 132. Bedtime, 112. Once a week, 13 with 93.

X. On rising have 25 or 25½. Forenoon or afternoon, 115½. Bedtime, 78½, without the foment.

Y. On rising have 95½. Forenoon or afternoon, 137. Bedtime, 73. Once a week, 13¼ with 30.

Z. On rising have 123. Forenoon or afternoon, 107. Bedtime, 128½ and 161. Once a week, 98.

A FEW ADDITIONAL HOME TREATMENTS.

"ALEPH," on rising, 115¾ (made almost all of linseed meal); forenoon or afternoon, 141 and 224. "Bedtime," 130; whilst in 105½.

"BETH," on rising, 119½ when dressed—forenoon or afternoon, 122½. "Bedtime," 110½; once a week, 13½.

"GIMEL," on rising, 64; forenoon or afternoon, 17 to legs. "Bedtime," 114; once a week, 35.

"DALETH," on rising, 157; forenoon or afternoon, 45½. "Bedtime," 130 whilst in 137; once a week, 222.

"HE," on rising, 16½; forenoon or afternoon, 109, using 25 to loins and thighs after. "Bedtime," 70; once a week, 99.

"VAU," on rising, 32; forenoon or afternoon, 119¼. "Bedtime," 105; once a week, 51.

"ZAIN," on rising, 20; forenoon or afternoon, 132 and 158. "Bedtime," 111; once a week, 99.

"CHETH," on rising, 22½, with vinegar and water, using foment pads out of

hot mustard and water to stomach, hands, and feet at same time; forenoon or afternoon, 65 (occasionally giving 23 or 68 instead). "Bedtime," 105¾ or 157; once a week, 13½ as delicate, and attending to the "pads" as on rising.

"TETH," on rising, "fomentation" to affected parts whilst giving 20; forenoon or afternoon, 58 or 17, or both. "Bedtime," 70, and "foment" affected parts at same time; once a week, 223.

"JOD," on rising, 149 or 150 whilst in 50; forenoon or afternoon, 117, with hydropult, whilst sitting, as 128. Use it tepid, if more agreeable, but with either, lay a hot pad on affected part first till able to bear it comfortably. "Bedtime," attend to 78; once a week, 52 or 55.

"CAPH," on rising, 12½; forenoon or afternoon, 116½, sitting as and using 128 before and after. "Bedtime," 119½ or 161; once a week, 13½.

"LAMED," on rising, 119½ or 108; forenoon or afternoon, 229 tepid, and with crisis sheet out of hot, and dry rub, as 19½. "Bedtime," 12½.

"MEM," on rising, 25 or 25½, using mustard pads to stomach and extremities; forenoon or afternoon, 59 or 60 and go to bed for one hour afterwards. "Bedtime," 130 and 73½.

"NUN," on rising, 14, with a little vinegar in water; forenoon or afternoon, 230 tepid or 116½, with hydropult; either of them taken whilst sitting as 128. "Bedtime," repeat the rising, if agreeable.

"SAMECH," on rising, 12½, varied with 115¾; forenoon and afternoon, carry out 104 in ladies' sitz, but without lowering the degrees till fully able to bear it comfortably; keep feet on flat hot-water tin, and use 130½ before or 132 during. "Bedtime," 70 and steamed hop pillow or mackintosh hot-water bag for head, and 193¼ and 195 and foot bottle.

"AIN," on rising, only renew the 185½ and 185¾, and give 12½ first, and keep in bed awhile, till all chill gone off; forenoon or afternoon, have 130 and 157. "Bedtime," give 13¼, and then 12 or 19½ with bump sheet out of 90 degrees, and put on fresh dress. The swansdown should only be sponged over with tepid water, not wrung out of water, unless done in a wringing machine, because it should only be *damp*, not *wet*.

"PE," on rising, renew the 220 (sprinkled or not, according to skin), and then give 162 and 161; forenoon or afternoon, 78½ alternate with 70¾, and renew the 220. "Bedtime," 105½ and 132, with feet on hot tin, and may stay in a quarter of an hour, if comfortable; once a week, have 222 or 99.

"TZADDI," on rising, 93 or 94, according to heat of body or weather; forenoon or afternoon, 70½, attending to warm-water bag or steamed hop bag for head at same time. "Bedtime," 137 or 138; once a week, 39 or 47, 224 or 215 with each.

"KOPH," on rising, 44½, alternate with 44; forenoon or afternoon, 105¾ or 119½; if latter, use steam pads to thighs and flat hot can to feet, and give 25 to loins and thighs afterwards. "Bedtime," 78½ when needed; once a week, have 13½ and 75½, or 76 after.

"RESH," on rising, 141½; forenoon or afternoon, 121. "Bedtime," as 231 when pain bad, and when not requiring this, give 70 for a quarter of an hour; once a week, 222 or 98.

"SCHIN," on rising, 20; forenoon or afternoon, 87 or 88 for half an hour in ladies' sitz, with warm can for feet, and 215 or 215½ or 224, whichever suits best, and occasionally 130. Give 25 to loins and thighs on coming out.

"TAU," on rising, 62; forenoon or afternoon, 105¾ or 119½, and give 153½ to windpipe. "Bedtime," 128, and use 22½ with vinegar and water before being removed from 128; once a week, 13½ given either way, as feelings dictate.

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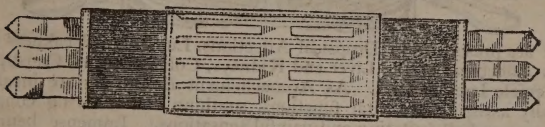

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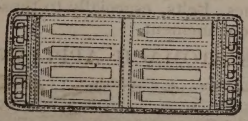

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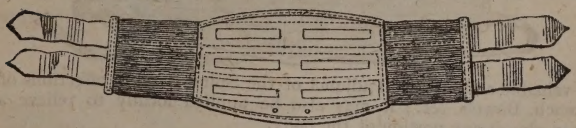

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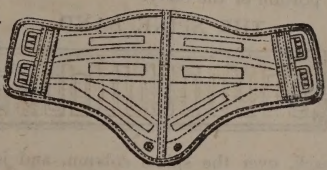

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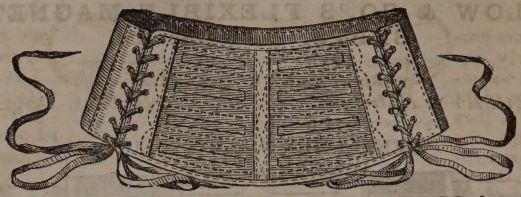

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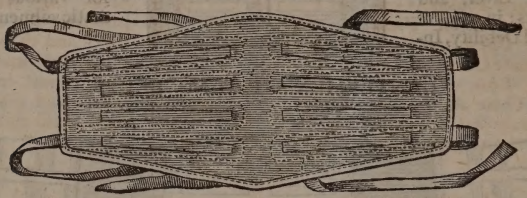

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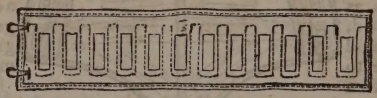

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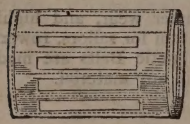

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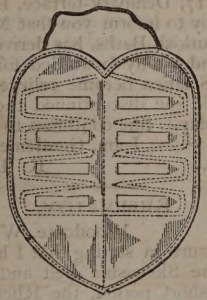

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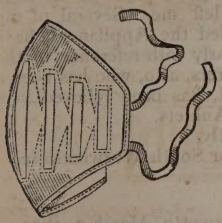

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Only Olive Oil, Spermaceti, and Chillies in the Paste. Does not produce rash or sores.

CHILLIE PASTE

Can now be obtained from all Chemists, or from HIRST, BROOKE, and HIRST, Manufacturing Chemists, Leeds, with whom Mr. Smedley has made arrangements for the exclusive Manufacture and Wholesale Agency of this highly beneficial remedy.

In Jars, at 2s. 9d. each.